FINAL ENGINEERING REPORT

BANNERMAN ROAD
(From North Meridian Road to Thomasville Road)

Project Number: BC-04-29-09-28

Prepared By: RS&H, Inc.

Prepared for: Leon County, Florida

The Bannerman Road Corridor Study is a Leon County Project

November 2012

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Reynolds, Smith, and Hills, Inc., a Florida corporation authorized to operate as an engineering business (EB No. EB0005620) by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have supervised the preparation and approve the evaluation, findings, opinions, conclusions, and technical advice hereby reported for:

Project: Bannerman Road Corridor Study
Location: Leon County, Florida

Report: Final Engineering Report
Financial Project ID No.: 414132-3-32-01

This report includes a summary of data collection efforts, traffic analysis, signal warrant analysis, and summary of conclusions. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering and planning as applied through professional judgment and experience.

Name: Nicholi A. Arnio, PE

Florida PE Registration No.: 67530

Signature: _____

Date: 11/9/2012

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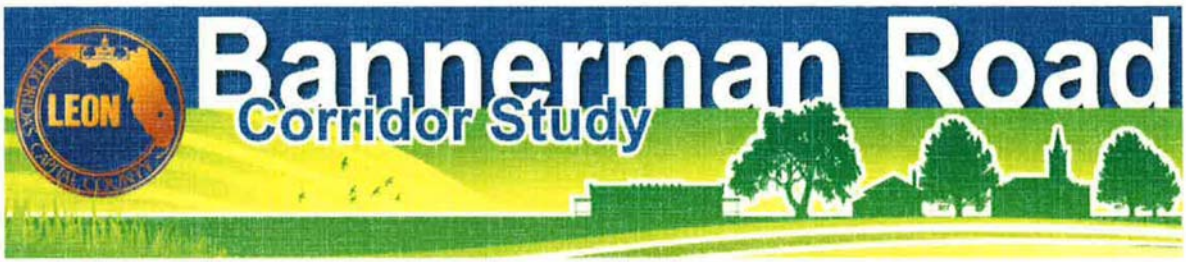
CAC ACCEPTANCE LETTER



November 1, 2012

Reference: Bannerman Road Corridor Study
Citizen's Advisory Committee Final Report

Dear Honorable Leon County Commissioners:

In July 2010 the Citizen's Advisory Committee (CAC) first assembled to consider transportation enhancements to the Bannerman Road corridor. The first action of the CAC was to divide the corridor into three segments. The segment termini were developed based on existing signals that coincide with a change in the traffic volumes and overall feel of the corridor. The segments for the corridor study are:

Segment 1: North Meridian Road to Bull Headley Road
Segment 2: Bull Headley Road to Tekesta Drive
Segment 3: Tekesta Drive to Thomasville Road

A detailed traffic study showed that only Segment 3 would require widening to meet the adopted level of service for the year 2035. The CAC agreed that widening options should be considered for only Segment 3, whereas bicycle and pedestrian facilities should be considered for the entire length of the corridor.

Upon appointment to this committee, each of us had our own set of goals and expectations, and our own unique experiences along and near Bannerman Road from which to drawn upon, but we remained open-minded and quickly established a positive working relationship with the County staff, the consultant team, and each other. As members of the CAC, we went into the process possessing some degree of expertise. A variation in experience level worked well because the overall CAC experience was part civic involvement, but even more about education, which came in the form of understanding large-scale transportation studies, which included stormwater treatment facilities, sidewalks and bicycle paths, and understanding roadway level of service calculations. This allowed all members to share bits of their expertise while absorbing the larger picture from County and consultant staff.

The CAC acknowledged the challenge of expanding a roadway and its requisite needs in an area that has already undergone severely restrictive stormwater treatment criteria, which affects all impervious surfaces. The CAC agreed early on that stormwater requirements, safety, and meeting the needs of the traveling public would drive the design of the roadway and other improvements. *Because the stormwater issues are a major part of the existing conditions and treatment requirements set by the County are very strict compared to other*

areas of the County, the CAC requests more and direct involvement by the County Department of Development Support and Environmental Management in the future studies.

For over two years, the CAC engaged in long discussions on numerous issues and topics. We worked cooperatively to agree on causes, methods, and outcomes. We were usually able to put differences of opinion aside to concentrate on the common goal of settling on a single overall transportation improvement plan.

Now, with the presentation of the 30 percent plans, the CAC brings its work to a close. We did not unanimously agree on the preferred alternative for each segment. The majority fully endorses the 30 percent plans as presented, and we hope it will be financially feasible to bring this plan to life for the betterment of the area residents and all the users of the Bannerman Road corridor. We had 13 CAC meetings throughout the entire study. At the end, one member did not agree with the widening recommendation of any portion of the roadway. For reference, the letter composed by this CAC Member is provided on page 17 of this document.

At all times, the CAC tried to be conscious about project cost while balancing the need for an environmentally pleasing and aesthetic transportation facility while minimizing the impacts to property owners along the corridor. There are several particular CAC concerns that were addressed at the time and are now illustrated in this plan. We list them here to caution future changes deviating from specific CAC intent.

Concerns that we addressed in the 30 percent plans reflecting the CAC's wishes are:

Segments 1 & 2:

- The CAC supports a 10' wide multi-use path on the north side of the roadway for segments 1 and 2.
- The CAC supports no improvements to the existing roadway due to the lack of significant growth in traffic and the added cost of stormwater treatment.

Segment 3:

- The CAC supports a four-lane, median divided roadway with a multi-use path, with the path being located on the north side of the road for Segment 3.
- The CAC supports minimizing cost to meet stormwater treatment requirements by utilizing the existing roadway as the westbound lanes.
- The CAC supports adding the eastbound lanes to the south of the existing roadway.
- The CAC supports the stormwater treatment within the swale to minimize acquisition of additional right-of-way for stormwater ponds.

- The CAC recommends delineation of the wild flowers just east of Quail Common Drive to Sable Chase Subdivision on the north side of the road. During final design, efforts should be made to preserve these wild flowers as much as possible.
- The CAC supports the construction of right and left turn lanes where they are warranted within Segment 3.

In conclusion, the CAC has enjoyed carrying out its mission and believes that County staff and the consultant team have assembled the best possible plan for this corridor. We congratulate everyone who was involved in the process, and we appreciate the County's foresight and adherence to a strict rule of citizen involvement by allowing the CAC to be a part of its public participation program for the Bannerman Road Corridor Study.

Sincerely,

The Bannerman Road Citizen's Advisory Committee

Approve:

Joanie D. Trotman, Chair

Fred Breeze, Vice Chair

Douglas R. Barkely, PE

Mark E. Reichert

Winifred Heggins

Stan Peacock

Dissent:

Michael Mendez

EXECUTIVE SUMMARY

This project is a Leon County Corridor Study to evaluate the need for widening of Bannerman Road between Thomasville Road (US 319) and North Meridian Road (CR 155). There are currently four (4) signalized intersections within the project limits, which include the intersections of Bannerman Road with North Meridian Road, Bull Headley Road, Tekesta Drive, and Thomasville Road. The project has been broken into three sections based on existing commuting patterns and traffic demand. Segment 1 begins at North Meridian Road and ends at Bull Headley Road. Segment 2 begins at Bull Headley Road and ends at Tekesta Drive. Segment 3 begins at Tekesta Drive and ends at Thomasville Road, a portion of which has recently been four-laned. The total project length is approximately 4.6 miles.

TRAFFIC

The substandard operating conditions within the Corridor Study Area by the 2035 Design Year warrant the widening of Bannerman Road between Tekesta Drive and Thomasville Road. This segment of the Corridor is currently operating at Level of Service (LOS) E and is expected to operate at LOS F in the year 2035. The Build alternatives, which include a 4-lane configuration, should replace the existing 2-lane configuration. Under Build conditions with the additional improvements at the Tekesta Drive intersection, the intersection is expected to operate at LOS C or better while Bannerman Road is expected to operate at LOS B or better by the 2035 Design Year.

Based on the forecasted traffic demand throughout the Bannerman Road corridor, the proposed future lane configuration is as follows:

Segment 1 – Two Lane (existing)
Segment 2 – Two Lane (existing)
Segment 3 – Four Lane (widen)

The signalized intersection at Tekesta Drive will also require additional improvements which include dual southbound lefts and a westbound right lane drop. Additional information on lane geometries is provided in the complete report.

CORRIDOR ALTERNATIVES

Alternatives were developed based on the identified needs and features that the Citizen's Advisory Committee (CAC) felt were important to the character and function of the Bannerman Road corridor. Vehicular demand and the implementation of bicycle and pedestrian accommodations were high priorities when developing corridor alternatives. The corridor alternatives include:

Segment 1:
Alternative A – Existing two-lane road with a multi-use path
Alternative B – Existing two-lane road with a sidewalk on one side
Alternative C – Existing two-lane road with sidewalks on both sides

Segment 2:
Alternative A – Existing two-lane road with a multi-use path
Alternative B – Existing two-lane road with a sidewalk on one side
Alternative C – Existing two-lane road with sidewalks on both sides

Segment 3:
Alternative A – Four-lane road with swales; widened to the south
Alternative B – Four-lane road with curb and gutter; widened to the south
Alternative C – Four-lane road with curb and gutter; widened to the north

DRAINAGE

Segments 1 & 2

The three build alternatives selected by the CAC for Segments 1 & 2 did not require off-site treatment Stormwater Management Facilities (SWMF's). Stormwater management would be provided using an aggregate storage zone under the trail or sidewalk area for all alternates. Although it requires 5' more right-of-way (ROW) and aggregate storage, Alternative A is preferred and recommended since it offers the greatest flexibility for recreational purposes.

Segment 3

The three build alternatives for Segment 3 required two significantly different stormwater management systems primarily due to the rural paved shoulder (Alternative A) and urban curb and gutter (Alternatives B & C) typical sections. Each Alternative provides a 10' recreational trail. There are 8 watershed basins in this segment.

- Alternative A consists of a 4-lane rural typical section and utilizes the roadway swale ditches for stormwater management. Except in Basin 3-1, the westbound roadway swale would provide the required Bradfordville Study Area (BSA) treatment for the roadway which would infiltrate initially into an underground storage system and then into the underlying strata. The eastbound roadway swale would provide attenuation and outfall into the existing drainageways. Basin 3-1 would utilize a pond to provide retention required to meet the Lake Jackson stormwater management requirements.
- Alternates B & C utilize a 4-lane urban curb and gutter typical section and an enclosed pipe collection system. A surface stormwater management facility was required for each basin for treatment and attenuation. Preliminary soils information, topography and land use were used to determine potentially suitable sites.

Estimates of the right-of-way and the cost to provide the required stormwater drainage and management facilities were developed and furnished to the CAC and presented to the public at the second public meeting.

The stormwater management recommendation for Segment 3 that is included in Alternative A has a significantly lower cost and requires only slightly more (0.4 acres) right-of-way.

THE PREFERRED ALTERNATIVE

The preferred alternative was taken before the Board of County Commissioners on October 11, 2011. The Board voted 7-0 to approve the CAC's recommendation which consisted of Alternative A in Segments 1, 2, and 3.

The selection of preferred alternatives for detailed consideration was based on the stated objectives for this project and from input received at the public meetings. The primary objectives are to increase the traffic capacity to accommodate existing and future volumes, to accommodate pedestrian and bicyclists, and to minimize costs and environmental impacts.

The CAC voted to determine the preferred alternative by ranking each alternative in each Segment. Voting occurred at the June 6, 2011 CAC Meeting. The CAC Members were asked to rank each Alternative from 1 to 4, 1 being the most preferred and 4 being the least preferred. The Leon County Public Participation (p2) Policy states that the CAC must have a majority for a vote to count. Outlined below are the selection results from the June 6th CAC meeting.

The Segment 1 CAC Preferred Alternative is Alternative A – Existing two-lane road with a multi-use path.

Segment 1 Ranking

CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	2	1	1	1	3	1	3
Alt. B	1	2	2	3	2	2	2
Alt. C	3	3	3	4	4	3	4
No-Build	4	4	4	2	1	4	1

The Segment 2 CAC Preferred Alternative is Alternative A – Existing two-lane road with a multi-use path. The CAC also recognizes the benefit of further study at the intersection of Bannerman Road and Reynolds Drive. This specific area is identified in the 30% Plans as an area in need of further engineering analysis in the final design phase.

Segment 2 Ranking

CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	1	1	1	1	2	1	1
Alt. B	2	2	2	3	1	2	3
Alt. C	3	3	3	4	4	3	4
No-Build	4	4	4	2	3	4	2

The Segment 3 CAC Preferred Alternative is Alternative A – Four-lane road with swales; widened to the south.

Segment 3 Ranking							
CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	2	2	1	1	1	1	1
Alt. B	1	3	2	3	3	2	2
Alt. C	3	4	3	4	4	3	3
No-Build	4	1	4	2	2	4	4

The CAC's recommended improvements will provide needed capacity improvements on Bannerman Road between Thomasville Road and Tekesta Drive, and provide needed bicycle and pedestrian facilities throughout the entire corridor.

The CAC recommends that between North Meridian Road and Tekesta Drive, a multi-use path be added to accommodate bicycles and pedestrians. The recommendation from Tekesta Drive to Thomasville Road includes widening from two lanes to four lanes with included improvements at intersection approaches where required by capacity analysis. A multi-use path is also recommended to accommodate bicyclists and pedestrians along Segment 3. The build alternatives considered include proposed minimum right of way of 156 feet. No interchanges or elevated structures are required.

The proposed project will include the construction of stormwater ponds, improvements at major intersections, and a multiuse path. Improvements between Thomasville Road and Tekesta Drive include additional left turn bays, which will address capacity issues.

PUBLIC INVOLVEMENT

The Public Involvement Process initiated by Leon County is a process that actively engages stakeholders in the decision making process. Known formally as the Transportation Corridor Study Public Participation (p2, pronounced "p-squared") Program, the intent of the Public Participation Plan is designed to fully acknowledge the value of community engagement at all levels, as required by Leon County Policy No. 03-07. The Public Participation theme focused on community, and it is designed to: 1) educate the community about the project; 2) receive community input as the project progresses; and 3) provide feedback to the community about project decisions. In accordance with the p2 process, three pivotal components were facilitated by the project team. These components include:

- Public Outreach initiatives
- Formation of the CAC
- Multiple Open House public meetings

These meetings were held in order to give those interested the opportunity to express their views concerning the location, conceptual design, social, economic, and environmental effects of this project.

COMMITMENTS, RECOMMENDATIONS, AND DISSENT

COMMITMENTS

During the public involvement portion of the Corridor Study, it was clear that the citizens within the Killearn Lakes Subdivision were concerned about the existing flooding issues within their neighborhood. Leon County intends to require the design engineer to address the existing flooding issues, to the maximum possible extent, in the Killearn Lakes subdivision during the design phase of Bannerman Road. If the existing flooding problems cannot be improved with the final design of Bannerman Road widening project, Leon County will establish a separate stormwater drainage master plan to have a comprehensive approach to solve these flooding issues**.**

A field visit confirmed the existence of wild flowers on the north side of Bannerman Road, just east of Quail Common Drive to Sable Chase Subdivision. During final design, efforts should be made to preserve the wild flowers as much as feasible. These areas should be delineated at the time of final design to minimize disturbance.

RECOMMENDATIONS

Shown on the following pages are the Preferred Alternatives for each of the segments for the corridor study. The evaluation matrix for each of the segments is also shown.

The placement of right and left turn lanes should be fully considered in the Final Design of Segment 3. McClure Drive may require a left turn lane and it is recommended that a turn lane study be completed at this location during Final Design. Median locations throughout Segment 3 should be fully analyzed to ensure that access is adequate.

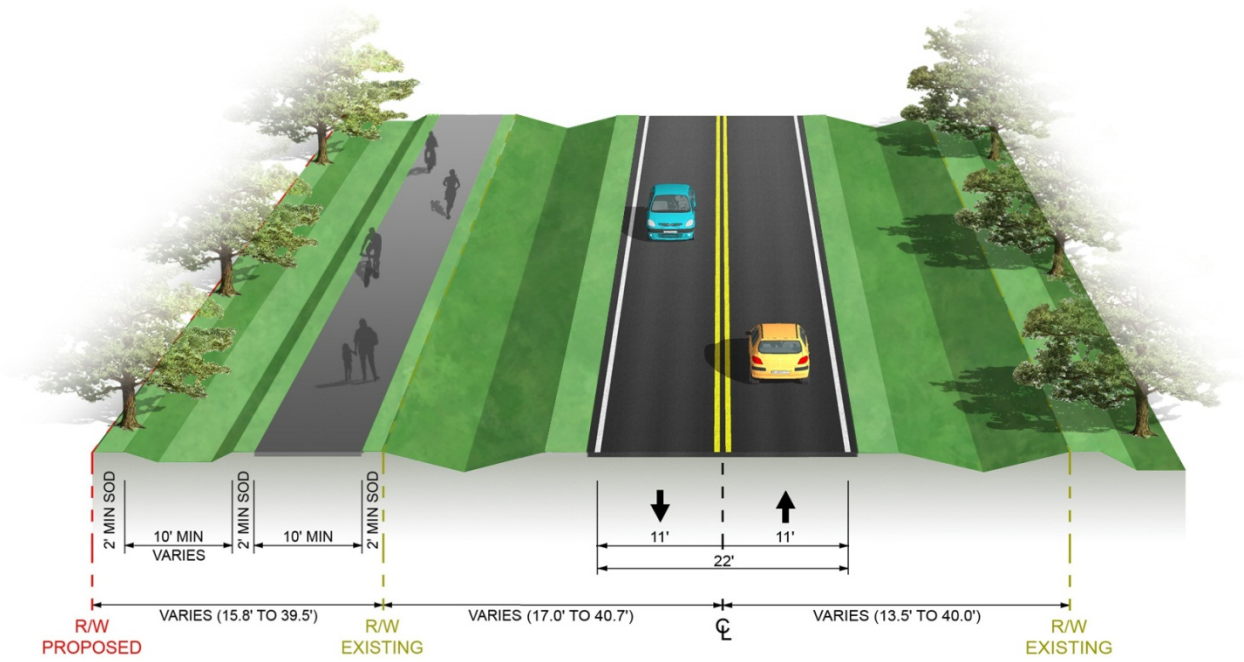
The traffic operations at the intersection of Reynolds Drive and Bannerman Road may benefit if this intersection were realigned with Tekesta Drive. There is approximately 230 feet separating Reynolds Drive and Tekesta Drive. Opposing left turn lanes are required and sufficient queue storage and decelaration lengths are not feasible in the current layout. Realignment of these roadways to make a four legged intersection should be considered. This was not addressed during the Corridor Study because Segement 2 did not require capacity improvements. The CAC recommends additional engineering analysis during the Final Engineering phase.

Stormwater management near Lantern Light Lane should be further investigated during Final Design, or through a separate project. Localized flooding has been reported just east of Lantern Light Lane, but was not fully addressed in this study.

DISSENT

One member of the CAC did not agree with widening Segment 3. A letter composed by this member can be found on pages 17 through 19 of this document.

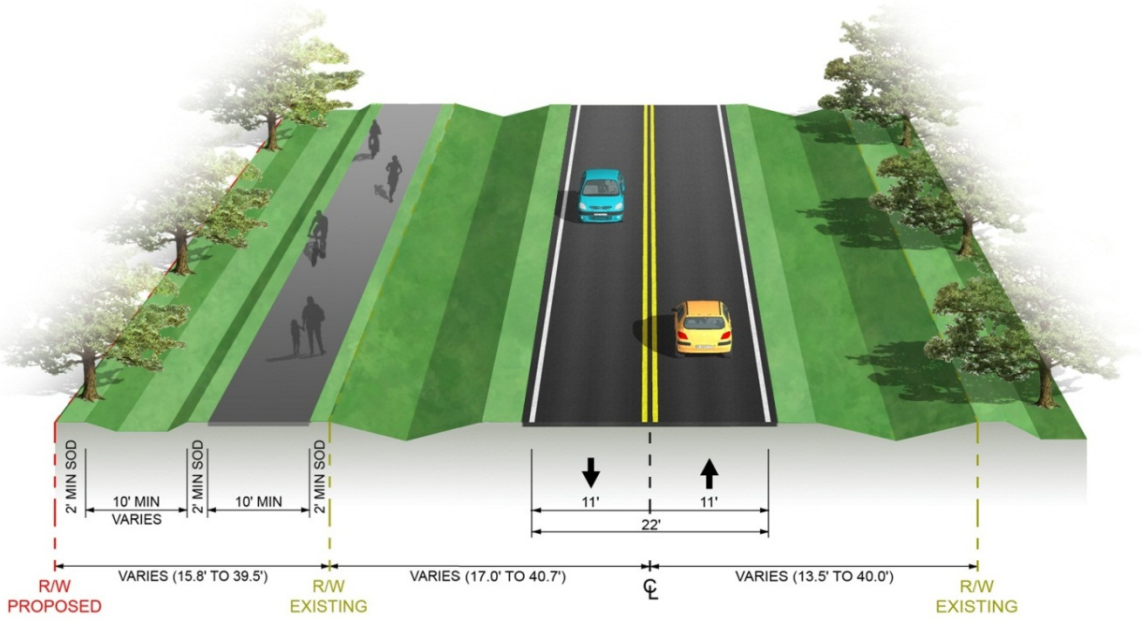
Segment 1: Alternative A



Segment 1	Alternative A
Meridian to Bull Headley	Multi-use Path, Swales
Social / Cultural Impacts	
Residential Impacts (parcels)	34
Residential Relocations (number)	5
Commercial Impacts (parcels)	1
Commercial Relocations (number)	0
Special Use (number)	0
Vacant / Unimproved (parcels)	12
Stormwater Pond Impacts (parcels)	0
Stormwater Pond Impacts (acres)	0.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.2
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	0
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 1,960,000.00
Final Design and CEI (dollars)	$ 390,000.00
ROW Cost (dollars)	$ 4,325,800.00
Total Cost $$[1, 2, 3]	**$ 6,700,000.00**

1. All associated costs reflect 2012 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates are preliminary and are expected to change over time and as more detailed design is completed.

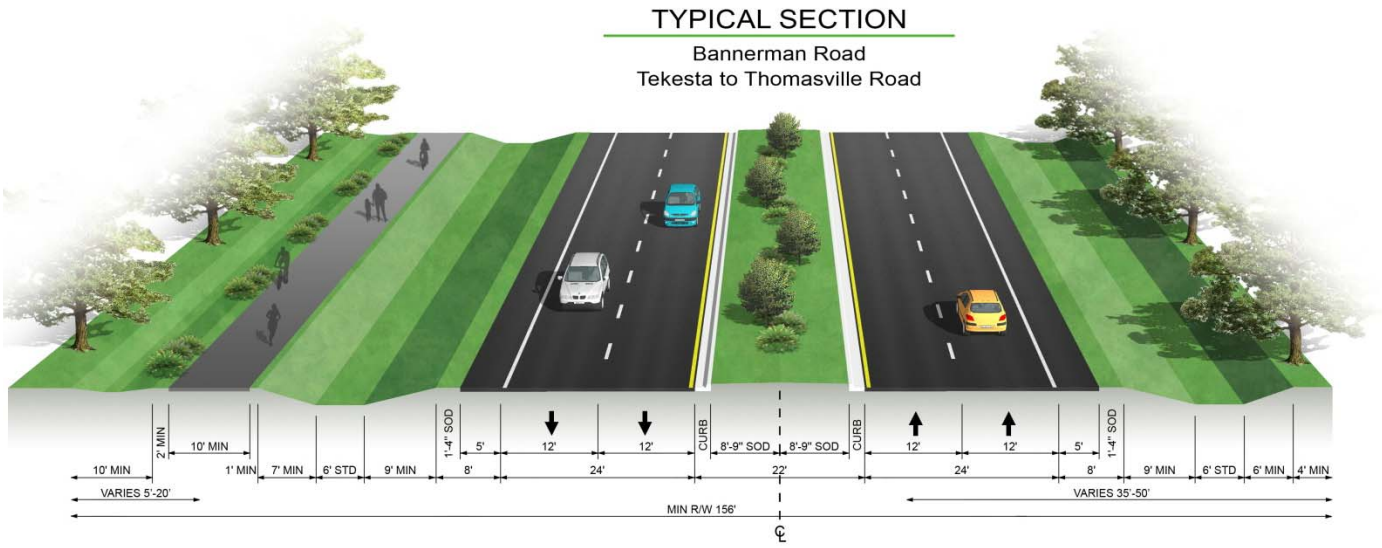
Segment 2: Alternative A



Segment 2	Alternative A
Bull Headley to Tekesta	Multi-use Path, Swales
Social / Cultural Impacts	
Residential Impacts (parcels)	0
Residential Relocations (number)	0
Commercial Impacts (parcels)	6
Commercial Relocations (number)	7
Special Use (number)	1
Vacant / Unimproved (parcels)	9
Stormwater Pond Impacts (parcels)	0
Stormwater Pond Impacts (acres)	0.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.2
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	1
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 1,320,700.00
Final Design and CEI (dollars)	$ 260,000.00
ROW Cost (dollars)[1]	$ 7,229,300.00
Total Cost $$[2, 3, 4]	**$ 8,800,000.00**

1. Minimizing or avoiding a take on the gas station (parcel 546), and on the Bannerman Office Condominium units (parcels 548, 28, 542, 421, 479, 472) may reduce the Segment 2 estimate to approximately $2.4M.
2. All associated costs reflect 2012 dollars.
3. The total estimated project costs are rounded to the $100,000.
4. The cost estimates are preliminary and are expected to change over time and as more detailed design is completed.

Segment 3: Alternative A – Widen to the south



Segment 3	Alternative A
Tekesta to Thomasville	Swales, Widen South
Social / Cultural Impacts	
Residential Impacts (parcels)	16
Residential Relocations (number)	0
Commercial Impacts (parcels)	0
Commercial Relocations (number)	0
Special Use (number)	4
Vacant / Unimproved (parcels)	6
Stormwater Pond Impacts (parcels)	1
Stormwater Pond Impacts (acres)	1.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.3
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	0
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 9,382,000.00
Final Design and CEI (dollars)	$ 1,880,000.00
ROW Cost (dollars)	$ 4,518,600.00
Total Cost $$[1, 2, 3]	**$ 15,800,000.00**

1. All associated costs reflect 2012 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates are preliminary are are expected to change over time and as more detailed design is completed.

Dear Honorable Leon County Commissioners,

My name is Michael Mendez, 8901 Winged Foot Dr, Tallahassee Fl and I have had the pleasure of serving on the Citizens Advisory Committee for the Bannerman Road Corridor study. Thank you for chairing the Citizens Advisory Committee. I think you will agree that the staff has been very helpful and professional throughout the entire process. The firm hired to do the study has done a very thorough job on what they were tasked to accomplish.

I found the experience to be very educational and enlightening in a number of areas. The process by which road projects are decided, the environmental impact of building a road, the group dynamics and the general lack of participation by the public were all real eye openers. The lack of participation is not the fault of staff or the firm hired to do the study, they both advertised and publicized the meetings above and beyond the call of duty My concern for this particular study stems from a couple of different areas; the results of earlier studies, the growth rate used to calculate the need, actual commuter time saved, storm water retention and the cost to build and maintain a four lane road now and in the future.

After reading the Capital Regional Transportation Planning Agency Year 2030 Long Range Transportation Plan, prepared by "Cambridge Systems, Inc", in April of 2006 I was surprised to find the Bannerman Road project listed very low on the priority list. It scored a 4 out of a possible 20 and was ranked in the extreme bottom of the road project list. If you consider that 2 of those points were awarded for connecting the extreme end of Bannerman, the part closest to Meridian Rd, with Thomasville Road, which is not included in the proposal for widening the ranking should be even lower. This study was

an independent study of the transportation needs of the entire county not just residents in the north east as the case in the CAC review.

The recommendations made to the Board to widen Bannerman road assume a 1% a year growth in traffic on Bannerman Road. I can find no verifiable data to back up this assumption. All national trends and goals seem to be contrary to this growth assumption. Highway trust funds are underfunded because of less driving and lighter vehicles. A growth rate used in this assessment would assume some sort of major jump in traffic into the NW corridor. Certainly development is not going to increase, there are not enough vacant lots approved for development to suggest this level of growth is possible. Schools in that area are already at capacity with more temporary housing units being added every year.

My interpretation of the responses that I received from the consulting firm doing the traffic analysis for Bannerman Road leads me to believe this project is not justified. Commute time will be affected for two hours 5 days a week, from roughly 7:30AM until 8:30 AM, then from 5:00 PM until 6:00 PM. The commute from Thomasville to Tekesta would be improved by an estimated 8 minutes in the year 2020, if we go with the 1% a year growth rate. This doesn't take into account the increased traffic on Deerlake and the possibility of slower commute times on that road. Deerlake was recently narrowed to slow traffic down. So how much time this would save the average commuter in getting to their front door is not clear.

The storm water run-off is another issue of concern. The Bradfordville standards are already half of what the Lake Jackson standards call for and Lake Jackson certainly has its problems. Since the recommendation of the committee will be dealing with only widening Bannerman from Thomasville to Tekesta those are the salient standards that I have a

concern with. First of all I'm not sure there adequate to protect Lake McBride. The Lakes/Ponds in Killearn Lakes are already over stressed with the small amount of rainfall we've had over the last ten years. Recently Pine Hill Lake has suffered a severe algae bloom.

The plan as I understand it will require the road to have storm water standards for only the new pavement being put down. That means a lot of the area that previously was used to percolate Bannerman Road will now have pavement, which doesn't percolate. This is really a net loss in storm water treatment. I realize that the Lakes in the Killearn Lakes chain are considered storm water ponds or lakes that are used for storm water, but the residents that live there view them quite differently. I'm not a storm water engineer but building another two lanes of road does not bode well for the Lakes in our area.
I'm having a hard time justifying the building of an additional two lanes of traffic on Bannerman for the small benefits that will be gained. I appreciate the staff and the County Commission for inviting the public to participate in this process.

Sincerely,

Michael Mendez
8901 Winged Foot Drive
Tallahassee, Fl 32312

1.0 INTRODUCTION

1.1. STUDY PROCESS

The objective of the Corridor Study process is to provide the analysis and documentation necessary to select a preferred alternative to address the transportation deficiencies within the corridor. This includes the type, design, and specific location of proposed improvements along the corridor. Factors under consideration include transportation needs, socioeconomic and environmental impacts, and engineering requirements.

Generally, the process involves the following steps:

- Evaluation of current conditions through the gathering and analysis of environmental, social, and engineering data
- Traffic forecasting of future needs
- Evaluation of segments along the corridor for needed improvements
- Development of alternatives within each segment
- Assessments of potential environmental and community impacts
- Selection of a Preferred Alternative to advance into Preliminary Engineering

During the process, communication with the affected public is accomplished directly, through public meetings and workshops, and indirectly, through electronic formats such as email, website, and interaction with elected officials and agency representatives. A Citizen's Advisory Committee (CAC) also interacts with the public and makes recommendations to the Board of County Commissioners.

1.2. PURPOSE AND NEED

The need for additional capacity on Bannerman Road was identified in the Capital Region Transportation Planning Agency (CRTPA) 2030 Long Range Plan. The Long Range Transportation Plan (LRTP) called for four-laning Bannerman Road from North Meridian Road to Thomasville Road. The purpose of the Corridor Study is to provide the documented information necessary for the County to reach a decision on the type, design, and location of the transportation facility.

Besides the roadway capacity issues, the 2030 LRTP has documented the need for bicycle and/or pedestrian facilities throughout the corridor. The County has also received complaints about the safety of the roadway for all users.

All factors related to the design and location of the facility must be considered, including alignment options, transportation needs, social impacts, economic factors, environmental impacts and engineering analysis. The purpose of this report is to document the engineering analysis performed to support decisions related to project alternatives including the "no-build" alternative. It summarizes existing conditions, documents the purpose and need for the project, and documents other data related to preliminary design concepts. These preliminary design

concepts establish the functional or conceptual design requirements, which will be the starting point for the final design phase.

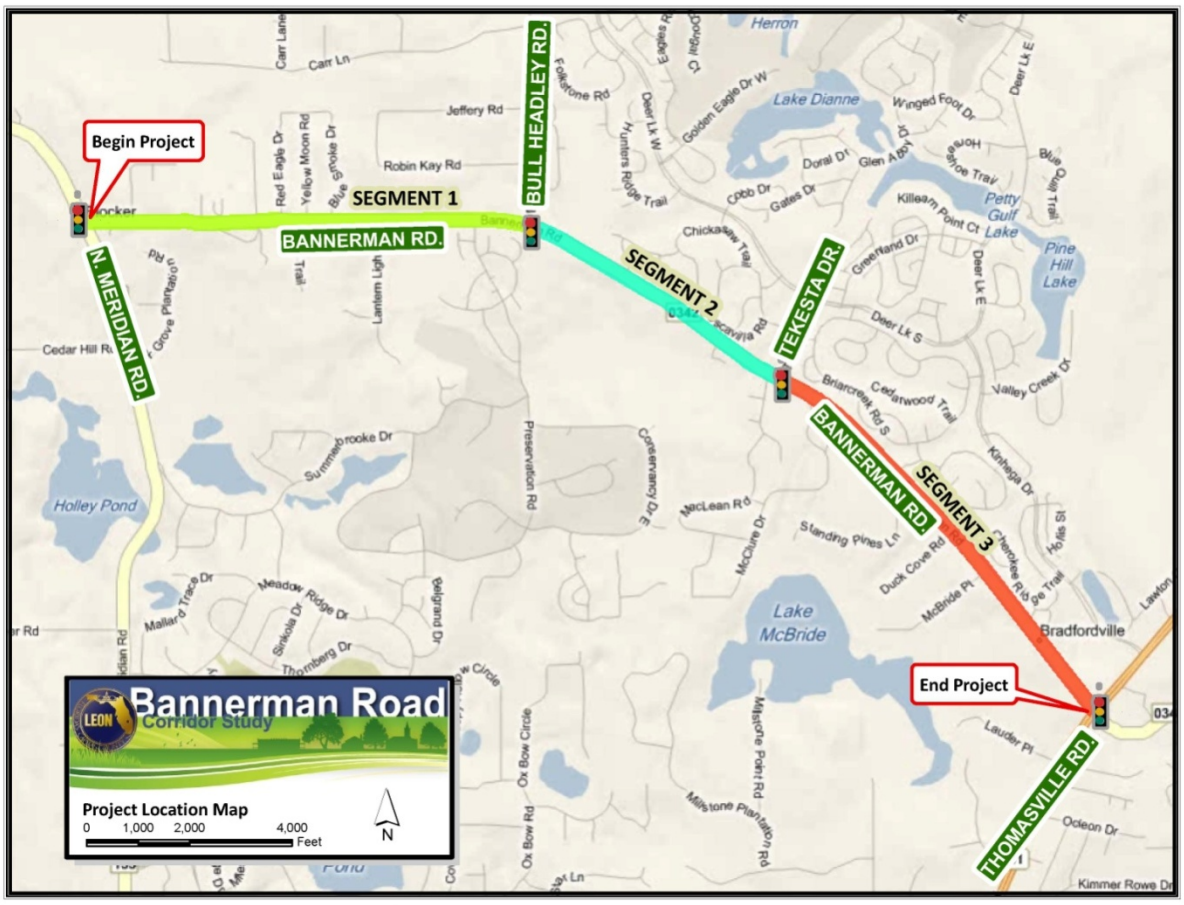
1.3. PROJECT DESCRIPTION

The proposed project involves improvements to Bannerman Road between Thomasville Road and North Meridian Road (CR 155), which is classified as a Major Collector. The project limits for this study are broken down into three segments. Segment 1 is from North Meridian Road to Bull Headley Road. Segment 2 of the study area includes the section from Bull Headley Road to Tekesta Drive. Segment 3 extends along Bannerman Road from Tekesta Drive to Thomasville Road (US 319/SR 61).

The majority of the project area is surrounded by woodlands and commercial/residential developments. The existing roadway is primarily two (2) lanes, but increases to four (4) lanes when approaching Thomasville Road from the west.

The total project length is approximately 4.6 miles. **Figure 1.1** shows the study area and its relationship with the highway network for the Tallahassee/Leon County area.

Figure 1.1: Study Area



The proposed facility is not part of the National Highway System, Strategic Intermodal System (SIS), Interstate or the Florida Intrastate Highway System (FIHS). The proposed improvements were identified as part of the Capital Region Transportation Planning Agency (CRTPA) 2030 Long Range Transportation Plan (LRTP) adopted Cost Feasible Plan. This analysis was developed based upon evaluation of future land use and traffic demand along the project's corridor. Bicycle lanes are also proposed along Bannerman Road in the Tallahassee-Leon County 2030 Bicycle and Pedestrian Master Plan. Additionally, sidewalks along Bannerman Road are included in the adopted CRTPA 2030 Regional Mobility Plan Cost Feasible Plan.

2.0 EXISTING CONDITIONS

Bannerman Road is a key east-west route that connects Thomasville Road with North Meridian Road. It is a major collector, providing the principal connection from surrounding residential and commercial communities to adjacent north-south routes. Both North Meridian Road (CR 155) and Thomasville Road (US 319/SR 61) are major routes with access into Tallahassee and to northern areas of Leon County.

2.1. EXISTING ROADWAY CHARACTERISTICS

2.1.1. Functional Classification

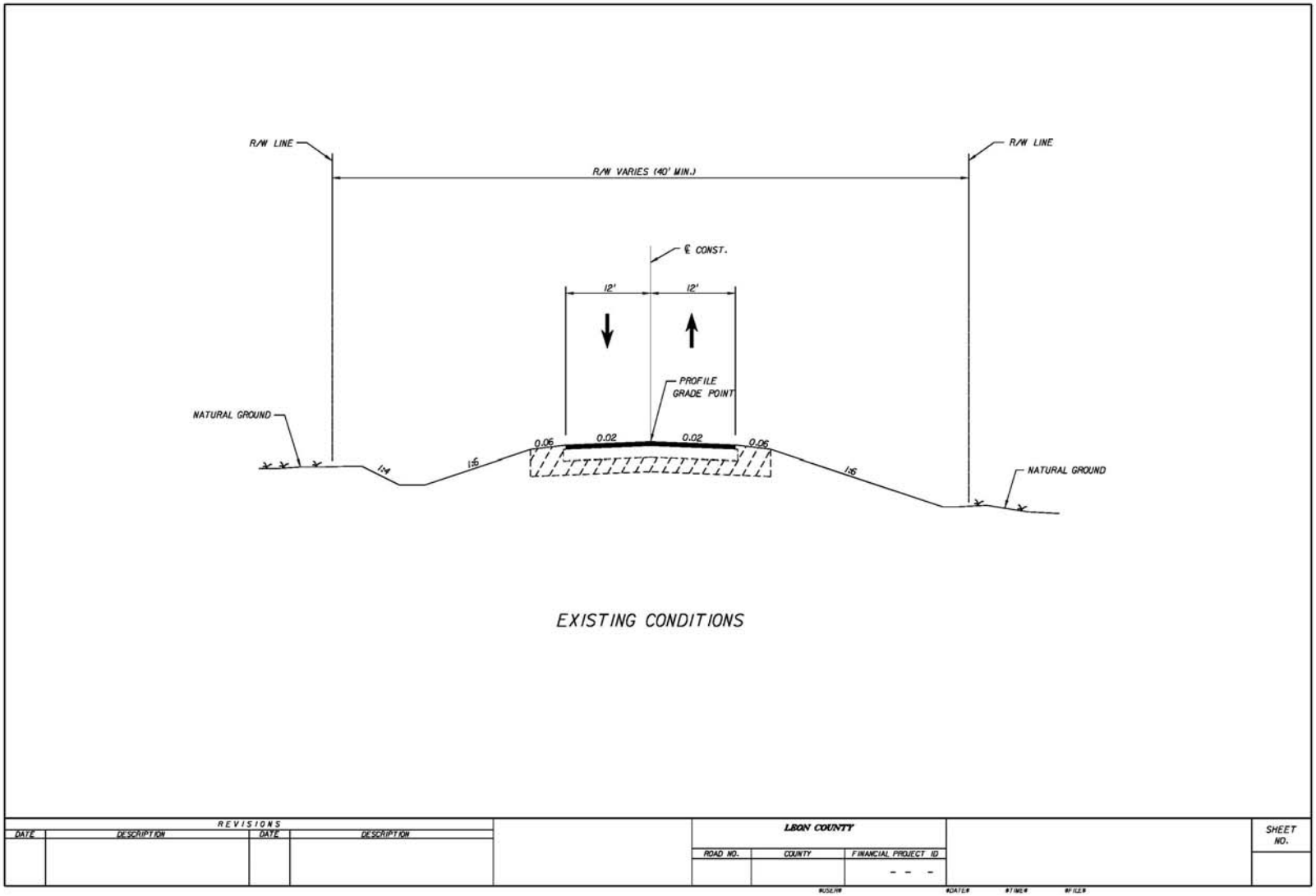
The existing roadway is classified as a major collector from North Meridian Road (CR 155 to Thomasville Road. In addition, it is not a designated truck route. The roadway is currently posted for 45 mph for the entire length of the corridor. The estimated design speed of the existing roadway is 45 mph, based on the horizontal and vertical alignments and current design standards.

2.1.2. Typical Sections

The majority of the existing roadway is a two-lane undivided highway. Typical section elements for the existing roadway are illustrated in **Figure 2.1**. The existing lanes are 11 feet in width. Existing graded shoulders vary along the corridor. The roadway was recently (2009) repaved, thus the lane markings and striping is in good condition.

The roadway does not typically include pedestrian or bicycle accommodations. Lighting is also absent from the majority of the roadway. The roadway drainage is completed through roadside ditches that convey runoff to the nearest outfall point. No stormwater treatment is provided for the roadway other than the flow time in grassed ditches. There are exceptions where local improvements have been provided at the North Meridian Road, Tekesta Drive and Thomasville Road intersections. There are also proposed and permitted improvements by Leon County to the intersection at Bull Headley Road that have not yet been constructed.

Figure 2.1:
Existing Roadway Typical Section



2.1.3. Pedestrian and Bicycle Facilities

There are presently no continuous designated facilities for pedestrians, bicycle lanes or shared use paths along Bannerman Road within the study area limits, with the exception of the short four-lane section and the intersection of Bannerman Road with Thomasville Road (US 319/SR 61), where there are sidewalks and bike lanes for approximately one-quarter mile. There is currently no local bus service along the corridor. The local bus service, StarMetro, has stated that there are no plans to extend bus service along the corridor.

2.1.4. Right-of-Way

Within the study area, existing right-of-way ranges between 40 feet in width for the majority of the corridor from North Meridian Road (CR 155) to Tekesta Drive and 100 feet in width to Thomasville Road.

2.1.5. Vertical and Horizontal Alignment

The construction as-builts of the existing roadway for Bannerman Road were not available. A complete roadway survey was conducted from May 2010 to September 2010. A centerline of the existing roadway was constructed based on the centerline of survey as well as the existing topographic survey. This created centerline indicates that Bannerman Road has various curves and deflections throughout the 4.6 mile corridor. **Table 2.1** summarizes the existing horizontal alignment. The existing vertical alignment is relatively flat on the east end with more grade changes toward the western end of the project. The elevations of the centerline range from a low of 163 feet to a high of 258 feet. The maximum grade throughout the corridor is approximately 4.5 percent.

Table 2.1: Centerline Alignment

C/L Station	Northing (Y)	Easting (X)		C/L Station	Northing (Y)	Easting (X)
10+00 B.O.S.	577331.5515	2037705.5940		116+00 P.O.T.	576368.7166	2048067.9619
19+00 P.O.T.	577337.1764	2038605.5765		124+01.04 P.I.	575965.7065	2048760.2367
28+88.57 P.C.	577343.3548	2039594.1247		127+41.05 P.C.	575794.6494	2049054.0866
31+17.84 P.T.	577324.8203	2039822.3527		129+55.46 P.T.	575676.573	2049232.9464
32+08.59 P.C.	577309.692	2039911.8594		139+77.17 P.I.	575066.6552	2050052.6029
35+07.19 P.T.	577293.8002	2040209.3683		145+78.21 P.C.	574707.8448	2050534.7937
43+69.12 P.C.	577346.2471	2041069.7048		149+99.66 P.T.	574482.0321	2050890.1950
48+08.83 P.T.	577358.9719	2041509.1479		160+15.33 P.C.	574001.8887	2051785.2158
58+21.33 P.I.	577355.9289	2042521.6501		170+24.88 P.T.	573396.1411	2052587.8228
76+04.24 P.I.	577358.175	2044304.5548		178+00 P.O.T.	572839.7029	2053127.4552
88+98.06 P.C.	577360.1458	2045598.3759		187+38.37 P.I.	572166.0768	2053780.7280
94+30.91 P.C.C.	577311.1715	2046128.2091		199+77.68 P.C.	571276.4003	2054643.5471
99+63.74 P.T.	577163.3487	2046639.2595		205+79.29 P.T.	570823.4064	2055038.9742
100+03.40 P.C.	577148.7365	2046674.1329		216+00 P.O.T.	570020.2592	2055668.8837
103+52.67 P.T.	576996.2907	2046990.0173		227+07.88 P.I.	569148.5368	2056352.5317
107+31.66 P.I.	576805.5898	2047317.5186		243+78.72 E.O.S.	567839.9094	2057391.4726

2.1.6. Drainage

There are three main drainage watersheds within the Bannerman Road Corridor: Lake Iamonia Basin, Lake Jackson Basin and Lake McBride Watershed (Lake Lafayette Basin). These are shown on the watershed basin map in **Figure 2.2**.

Segments 1 and 2 of the corridor tend to cross well defined drainage features and have fairly significant relief, a significant cross-slope and a constrained section on narrow right of way. These segments have a less dense residential population than Segment 3.

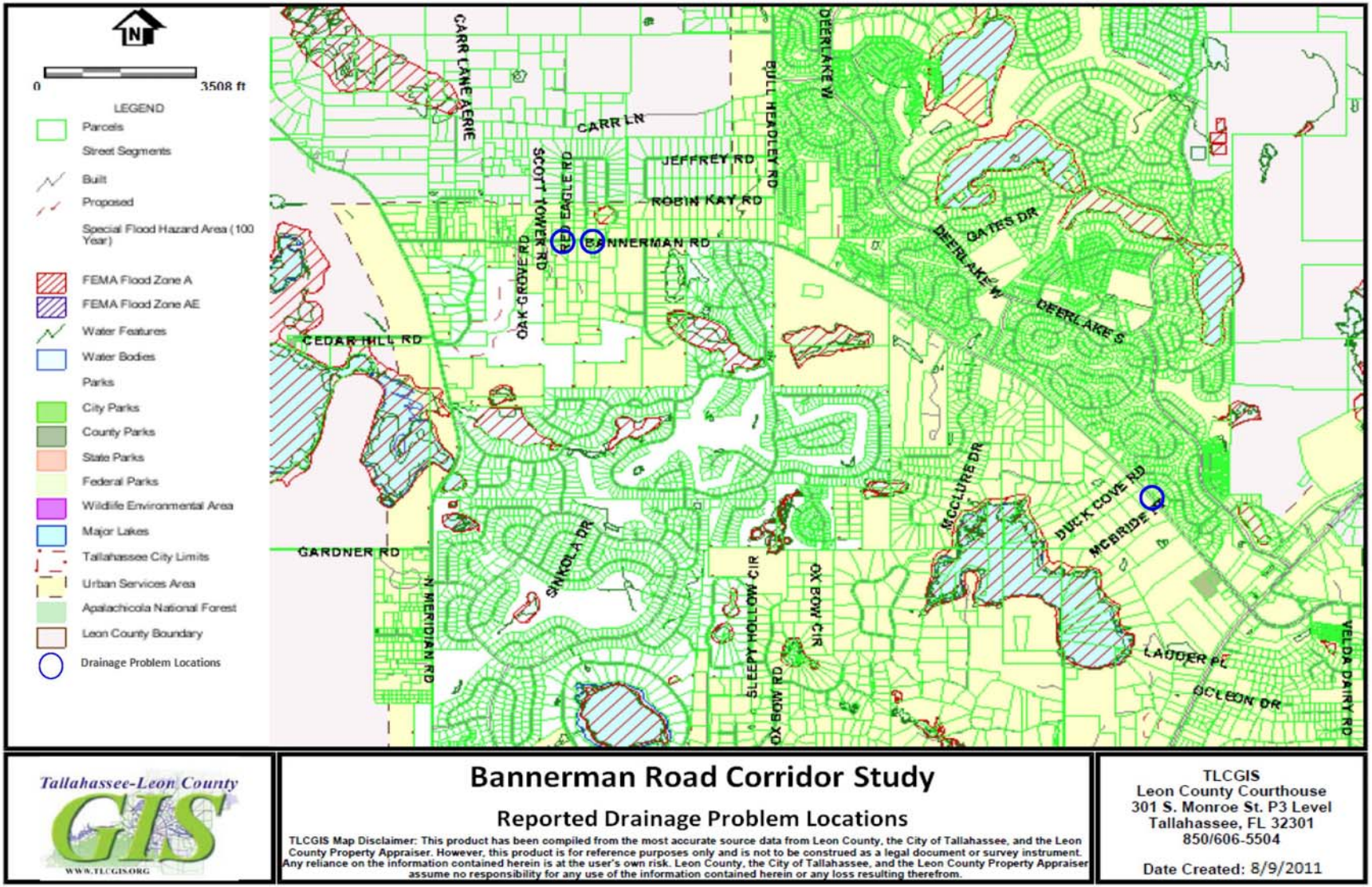
Segment 3 begins at Tekesta Drive, a major access point to the Killearn Lakes Residential Development, and ends at Thomasville Road. The eastern end of Segment 3 has already been widened to four-lanes as part of the Thomasville Road Improvements at the intersection of Bannerman Road and Thomasville Road. Segment 3 generally runs along the ridge between three drainage basins with some hills along the profile. Due to the proximity to the ridge, there tends to be less cross-slope and shorter, flatter grades. A major power line runs parallel to the roadway on the north side on the Killearn Lakes green space.

Several locations close to Bannerman Road were reported as have drainage problem conditions. The reported areas are shown on **Figure 2.3.** These locations were researched and evaluated as part of the corridor study. The actual problem areas were determined to be adjacent to the corridor and did not involve the roadway stormwater system. Two of

the locations are within Segment 1 where the proposed corridor improvement of the 10' trail provides stormwater management within the trail construction area. The drainage problem location in Segment 3 is also adjacent to the project but within the segment of the corridor where stormwater improvements are required. The recommended stormwater management design for this area provides retention for a volume approximately equivalent to the runoff generated by the current roadway right of way which presently naturally drains to Killearn Lakes at this location.

Figure 2.2: Bannerman Road Area Watersheds

Figure 2.3: Reported Drainage Problem Locations



Design Considerations

The Bannerman Road Corridor Study scope requires stormwater design options for the three build alternatives of each segment. Each segment has unique stormwater requirements that were considered during the analysis process. Discussions with Leon County Public Works (LCPW), Leon County Growth and Environmental Management (LCGEM) and the Northwest Florida Water Management District (NWFWMD) occurred during the stormwater conceptual design.

The soils along the Bannerman Road corridor are critical to the stormwater design. Further discussion of the geotechnical exploration can be found in **Appendix B** and **C**. Vertical infiltration rates in the Bannerman Road corridor are limited due to the shallow depth of permeable soils above highly impermeable soils throughout the corridor. The most effective infiltration method to meet retention requirements was determined to be a linear system to utilize the horizontal component of infiltration to the maximum extent practical.

Other considerations include, but are not limited to, topography, utilities, maintenance, right of way impacts and potential usage. Stormwater best management practices (BMP's), treatment trains and innovative stormwater concepts were anticipated to be necessary to meet the stringent stormwater requirements of this project. Numerous alternatives were considered, and the most feasible of these are discussed in the following section.

Regulations

There are many stormwater standards that apply to the Bannerman Road Corridor. The regulating bodies include the Northwest Florida Water Management District (NWFWMD) and Leon County. There are additional special regulations in the Leon County Land Development Codes regarding the Bradfordville Study Area (BSA) and Lake Jackson Basin Protection Area. Selected criteria for the various drainage watersheds are shown in **Table 2.2** below by segment. Specific regulations are discussed in the following subsections.

Table 2.2: Watersheds by Segment

	NWFWMD	Leon Co	BSA	Drains to Lake Iamonia Basin	Drains to Lake Jackson Basin	Drains to Lake McBride Watershed
Segment 1	x	x		x	x	
Segment 2	x	x	x		x	
Segment 3	x	x	x	x	x	x

NWFWMD

- Open basins: Pre-post flows for 2-yr 24-hr and 25-yr 24-hr with SCS Type III distribution and Antecedent Moisture Condition (AMC) II (Part III 3.3 ERP AH Volume II and Part IV 4.5 ERP AH Volume II)

- Closed basins: Pre-post flows for 25-yr 96-hr storm (Part III 3.3 ERP AH Volume II)
- SWMF's are considered as impervious for pre-post runoff calculations (Part IV 4.10 AH Volume II)
- Off-line retention (including exfiltration): Retention of the first 0.5" of runoff from the contributing area to Class III water bodies, with an additional 50% if directly discharging to Outstanding Florida Waters (OFW), recover within 72 hours with average AMC (Part V 5.0-5.5 ERP AH Volume II)
- On-line retention (including exfiltration): Retain runoff from 1.0" rainfall, with a minimum retention volume of 0.5" of runoff from the contributing area to Class III water bodies, with an additional 50% if directly discharging to OFW , recover within 72 hours with average AMC (Part IV 4.12 AH Volume II, Part V 5.0-5.5 ERP AH Volume II)

Leon County

- Open basins: Pre-post flows up to and including 25-yr storm, discharge only if downstream facilities are adequate with no offsite impacts (Sec. 10-4.302)
- Closed basins: Pre-post retention of runoff volume up to 100-yr 24-hr storm, recover ½ volume in 7 days and the total volume in 30 days (Sec. 10-4.301.(3)(b))
- Off-line retention: 50% of runoff from the first 3" of rainfall, or for drainage areas less than 100 acres, the first ¾" of runoff, full treatment volume available within 72 hours following the storm event. (Sec. 10-4.301.(2)(b) (ii))
- On-line retention or detention with underdrained filtration: 75% of runoff from the first 3", or for drainage areas less than 100 acres, the first 1.125" of runoff; underdrained option must recover the treatment volume within 36 hours (Sec. 10-4.301.(2)(b) (iii)).

Bradfordville Study Area (BSA)

The BSA is delineated in the Bradfordville Sector Plan that was adopted in the year 2000. A map of the BSA limits within the Bannerman Road corridor (Segments 2 and 3) is included in **Figure 2.4**. The Bradfordville Sector Plan developed a long term plan for the growth and development of the Bradfordville area. It also established more stringent stormwater standards that were incorporated into the Leon County Land Development Codes Sec. 10-4.301. (5) and Sec. 10-4. Subdivision 5. A few key stormwater design criteria for various types of facilities and recovery methods are listed below.

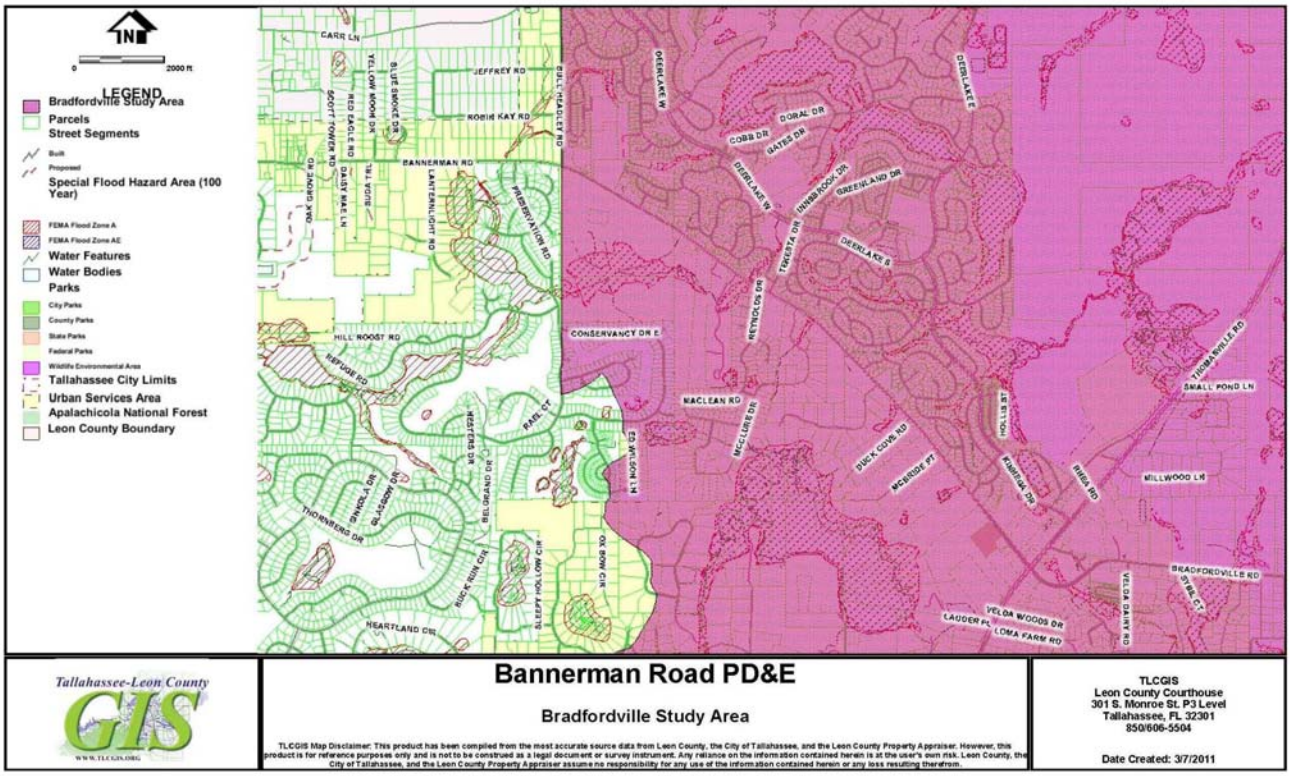
- On-line dry retention: 4" times the impervious area, with 100% volume recovery in 72 hrs
- Combination of offline dry retention and detention:

  Offline dry retention: 2.5" times the impervious area and recover the volume in 24 hrs, plus either:
  Dry detention of 2" over the impervious area and recover the volume in 72 hrs
  Or a wet detention permanent pool volume of 2.9" times the impervious area
- Maximum irrigation rate of 1.5" per week

- The retention volume must recover within the time frames above unless an approved continuous analysis, using Tallahassee Airport rainfall data from January 1, 1959 to December 31, 1998, demonstrates that the total volume retained within the stormwater system over the 40-year period is greater than or equal to that retained by a dry retention system as listed above.

The BSA standard for on-line retention requires a recovery time of 72 hours, versus off-line retention which requires recovery of 37.5% less volume in 24 hours. The extremely low infiltration rates in the Bannerman Road corridor make it difficult to recover either volume within the required time period. Continuous simulation analysis is an alternative procedure to show that the proposed facility would perform adequately over a 40 year simulation period. Based on discussions with LCGEM staff, it is typical that a storage volume of 2-3 times the 4" treatment volume requirement is required to meet the BSA criteria for on-line dry retention when using continuous analysis.

Figure 2.4: BSA Limits



Lake Jackson Basin Protection Area

The Lake Jackson Basin Protection Area has additional stormwater requirements for non-single-family residential development in the Leon County Land Development Codes Sec. 10-4.301.(4). The requirements listed below are the design criteria considered during the conceptual design.

- Retain post development runoff on site through the 50-yr 24-hr storm
- Recover ½ of the retention volume in 7 days and the total volume in 30 days

The post development retention volume is extremely large compared to the other stormwater criteria in this corridor. Recovery of that volume is extremely difficult due to the low infiltration rates and deep impermeable soil layers in the Bannerman Road corridor.

Stormwater Exemptions

Several stormwater exemptions were identified and discussed with the regulatory offices. Leon County Growth and Environmental Management (LCGEM) has indicated that the existing roadway impervious area would be exempt from treatment of the BSA requirements provided that the existing roadway base is not disturbed. This exemption limits the roadway improvement to the existing alignment and profile.

LCGEM and NWFWMD both have stormwater exemptions for sidewalks up to 6' wide, and NWFWMD has an exemption for recreational paths up to 12' wide. The exemptions are contingent upon proof of no downstream impacts, no known existing flooding issues and not placing the sidewalk or path within a wetland.

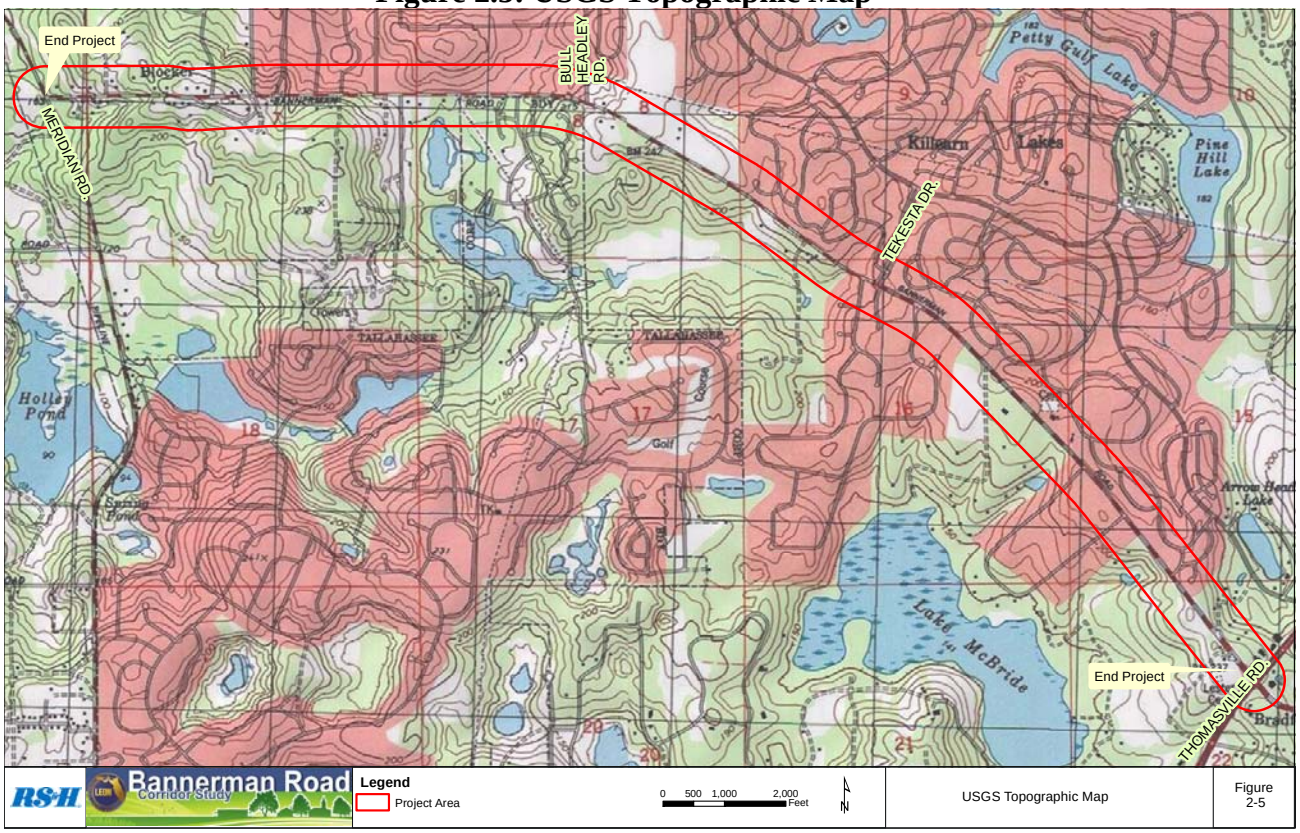
Within Segment 1, LCGEM has indicated that a design using an aggregate or sand sub-base under the sidewalk(s) which can hold the Leon County retention volume of 1.125" over the new impervious area should satisfy the stormwater requirements within the segment. This design addresses water quality concerns about runoff from the new impervious surface, and eliminates the need for additional Stormwater Management Facility (SWMF) sites within Segment 1. LCGEM has also indicated that a similar aggregate or sand sub-base sized to hold the 4" BSA requirement over the sidewalk(s) within Segment 2 will be sufficient to meet all requirements. This eliminates the need for additional SWMF sites in Segment 2.

A similar aggregate sub-base would also be used when a 10' multi-use trail is proposed in Segments 1 & 2. LCGEM has stated that a pervious pavement section should be sufficient to address the stormwater requirements, but also indicated a preference for the aggregate sub-base storage method due to pervious pavement maintenance concerns. The alternate for a trail with a storage sub-base reduces the maintenance requirements and is the recommended method of storage.

2.1.7. Geotechnical Data

A review of the United States Geological Survey's (USGS) Topographic Map of the project area indicates the topography of the project area consists of rolling hills varying between EL 163 feet and EL 253 feet. The drainage appears to be routed through existing swales and low lying wetland areas. A copy of the USGS Topographic Map of the project area has been included in **Figure 2.5**.

Figure 2.5: USGS Topographic Map



Two separate geotechnical reports have been completed for the Bannerman Road Corridor Study. The first report was the October 2010, Phase I Roadway Soil Survey (see **Appendix B)**. This was to provide preliminary geotechnical investigation along the entire roadway corridor. It included results for 24-5.5' borings. Laboratory tests were performed on the soil samples including water content, grain-size distribution and Atterberg limits. The soil samples were also classified according to the Unified Soil Classification System (USCS) and American Association of State Highway and Transportation Officials (AASHTO). Construction recommendations included avoiding deep cuts due to the existing soil properties. It was also noted that while groundwater was not encountered, perched water tables within three feet of the surface should be anticipated at some locations in the corridor after heavy rains.

The second report was the June 2011, Preliminary Infiltration Investigation (see **Appendix C**). This provided preliminary infiltration and soil investigations within Segment 3 only. It included results for 18-25' borings as close as practical to potential Stormwater Management Facility (SWMF) sites. Laboratory tests were performed on the soil samples including water content, grain-size distribution and Atterberg limits. The soil samples were classified according to USCS and AASHTO. Groundwater was encountered in some of the borings, but this was believed to be the perched water table. Estimates of the perched "normal" seasonal high groundwater and the permeability of

each soil stratum were also included in the report. The permanent ground water was estimated near elevation 180-185 in Segment 3, below the depth of the 25' borings.

In addition to the project specific investigations, permitted facilities near Bannerman Road were researched through the City of Tallahassee and Leon County permit records. It was determined that the infiltration values used in these permits did not appear to be consistent with the preliminary geotechnical data obtained for the project. It was also noted that many stormwater facilities in the area were redesigned after project completion to meet permit requirements due to an observed infiltration rate that was lower than designed.

A more detailed soil investigation will be required based on the investigations to date to assure that the necessary storage will be provided consistent with the infiltration rates and recovery times. For the final design, borings as frequent as every 100 feet in each infiltration area may be necessary to appropriately design storage and infiltration.

Karst Conditions

According to the Phase I Roadway Soil Survey and the Tallahassee/ Leon County GIS Database, there is an area in Segment 1 near Lantern Light Lane where karst conditions may be present. Depending on the ultimately preferred alternative, SWMF sites may not be necessary in this Segment, and therefore, potential karst impacts should be minimal. However since the entire project corridor is within the NWFWMD mapped karst sensitive area the design will be sensitive to minimizing conditions which would create sinkhole formation potential.

2.1.8. Crash Data

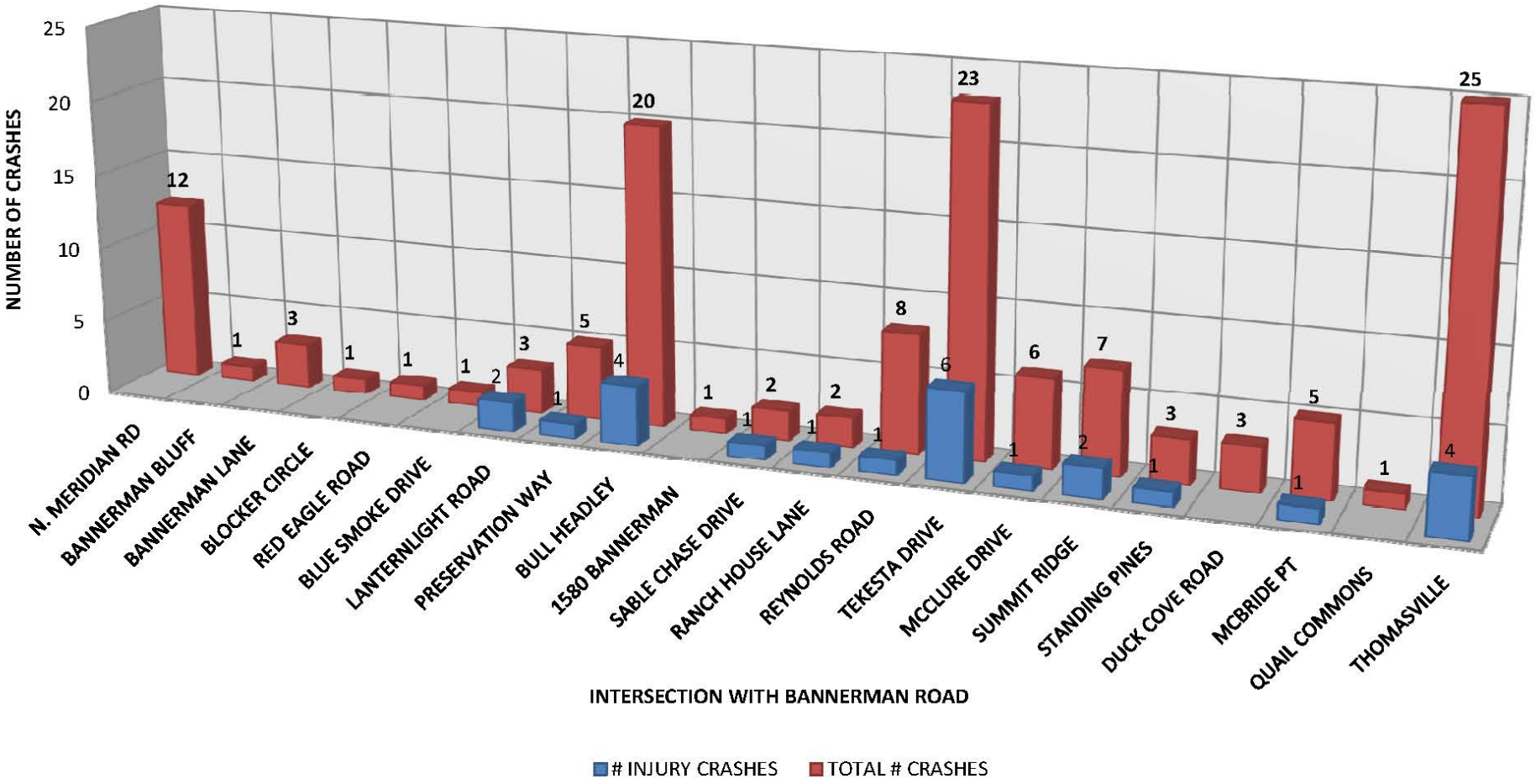
Crash data for Bannerman Road from North Meridian Road (CR 155) to Thomasville Road was obtained for the five-year period from Summer 2005 to Spring 2010. This data was analyzed to determine the specific types and locations of crashes that occurred along the corridor and at intersecting roadways. Crash data are summarized in **Table 2.3.**

There were a total of 133 crashes reported for the period from Summer 2005 to Spring 2010. Of these, 26 were injury crashes, and there were no fatalities. The crashes by location are reported in **Figure 2.6**.

Table 2.3: Summary of Traffic Crash Data

Crash Type	2005	2006	2007	2008	2009	2010	Total	Avg/Year
Total Crashes	**4**	**26**	**42**	**34**	**24**	**3**	**133**	**26.6**
Number of Fatalities	0	0	0	0	0	0	0	0
Number of Injuries	3	5	8	12	4	0	32	6.4

Figure 2.6: Summary of Traffic Crash Data by Location



2.1.9. Intersections and Signalization

Existing traffic signals are located at four intersections within the study limits:

- Bannerman Road at North Meridian Road (CR 155)
- Bannerman Road at Bull Headley Road
- Bannerman Road at Tekesta Drive
- Bannerman Road at Thomasville Road

2.1.10. Lighting

Street lighting is not provided along the corridor. There are intermittent street lights at the intersections:

- Quail Commons
- McBride Estates
- Duck Cove Road
- Standing Pines
- Trinity Baptist Church
- McClure Drive
- Summer Brook Entrance

The eastern end of the project was recently four-laned, but the improvements did not include street lighting.

2.1.11. Utilities

There are 7 Utility Owners within the proposed corridor as identified through the **Sunshine State One-Call of Florida system**. These include water, sewer, gas, power and communications facilities along both sides of Bannerman Road. In addition to the Sunshine State One-Call system, utilities were located by filed observations; City, County or Private As-Builts; and /or City, County or Private GIS (Geographic Information Systems). Area utility owners include:

- Talquin Electric Cooperative
- City of Tallahassee
- Comcast Tallahassee
- Centurylink

Some of the major utility attributes of this corridor consist of the following:

- **Power**- multiple overhead power facilities along both sides of Bannerman Road with crossings throughout the corridor. These facilities are on both wood and concrete poles. Carriers identified through Sunshine One Call include: Talquin Electric Co-op, Inc., City of Tallahassee, and City of Tallahassee Traffic.

- Coordination with Talquin Electric should be completed with:
  Kevin Whyte, Engineer
  850-627-7651
  Quincy, Florida

- **Communications**- buried conduits with telephone and fiber optic lines run for short distances along both sides of Bannerman Road. These lines service residences and businesses throughout the corridor. Carriers identified through Sunshine One Call include: CenturyLink and Comcast Tallahassee.

- **Water/ Sewer**- there are two municipal service providers of water and sewer facilities within the corridor with lines along both sides of Bannerman. There are also multiple fire hydrants within the corridor. Carriers identified through Sunshine One Call include: Talquin Electric Co-op, Inc. and City of Tallahassee

- **Gas**- multiple buried gas facilities along both sides of Bannerman Road. Carriers identified through Sunshine One Call include: CenturyLink, Comcast Tallahassee,

The locations of these existing facilities are depicted in the **Utility Survey**. Coordination with these utility companies will continue through the design phase of the project.

2.1.12. Access Management Classification

The median treatment of this segment of Bannerman Road is "non-restrictive," it is also an undivided roadway that allows turns across the mainline at any access point (Florida Department of Transportation (FDOT) Access Class Level 4). According to Access Management Classification System and Standards for "Non-Restrictive" Design Facilities, Class 4 is defined as a segment of road where surrounding land use and roadway sections have not been designed to accommodate a higher density than those classified as Class 6 and where the probability of major land use change is higher than the areas surrounding roadway segments categorized as Access Class 6. However, the determining factor lies within the spacing between connection points, (i.e. residential driveways, connector roads, business entrances, etc.) The typical spacing between connector roads for Bannerman Road has been determined to be greater than 440'. With this information, an Access Class 4 was determined.

The current Access Management Classifications could change with this project if the preferred alternative is to widen the roadway and include a divided median. Approximately 1,000 feet of the eastern portion of the corridor is currently four-laned. The Access Management Classification of this segment of the corridor is Class 5. Access Class 5 is a restrictive classification that allows full median openings every 1,320 feet and directional median openings every 660 feet. Side street and driveway spacing is allowed every 245 feet because the posted speed limit is 45 miles per hour or less.

2.1.13. Pavement Conditions

The existing pavement throughout the entire corridor is in excellent condition after Bannerman Road was repaved in 2009.

2.1.14. Existing Bridges

There are no existing bridges along the corridor.

2.2. ENVIRONMENTAL CHARACTERISTICS

2.2.1. Land Use Data

The existing land uses directly adjacent to the roadway are primarily single-family residential, with several locations of retail, office, religious/non-profit, and open space. There is significant vacant land use along the corridor. Future land use along Bannerman Road is projected to be residential preservation, Bradfordville mixed use (primarily at the intersection of Bannerman Road and Thomasville Road), and lake protection. Existing and future land uses are shown in **Figure 2.7** and **Figure 2.8**.

Figure 2.7: Existing Land Use Map

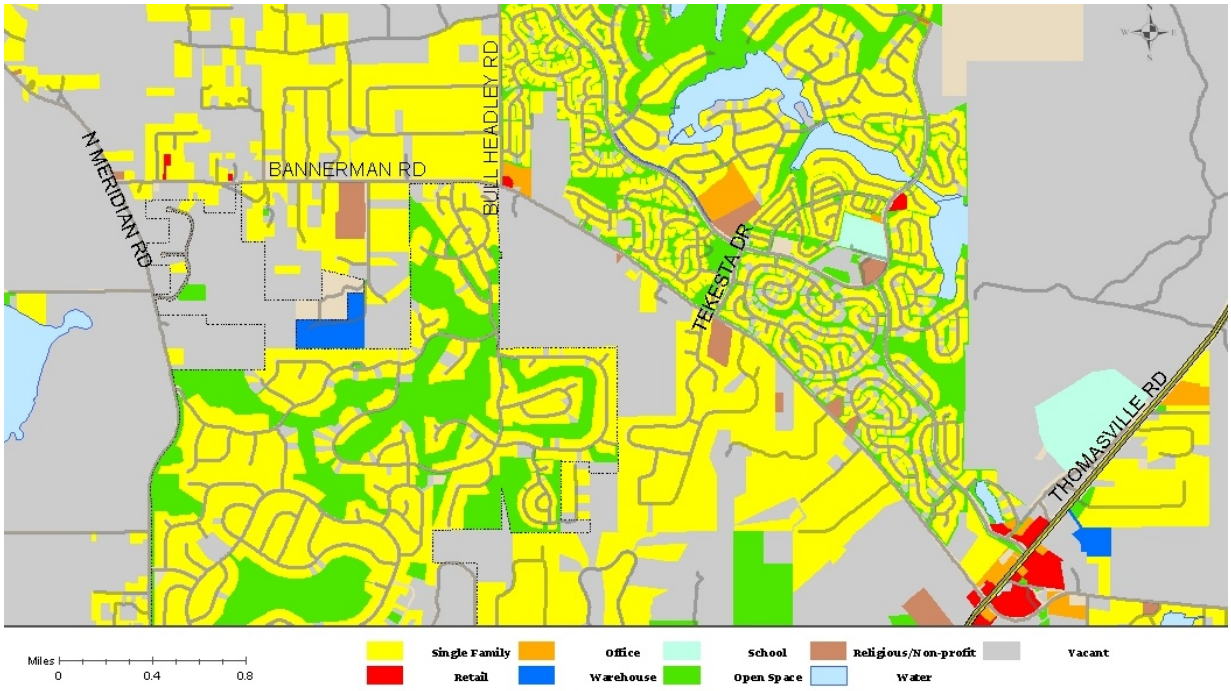
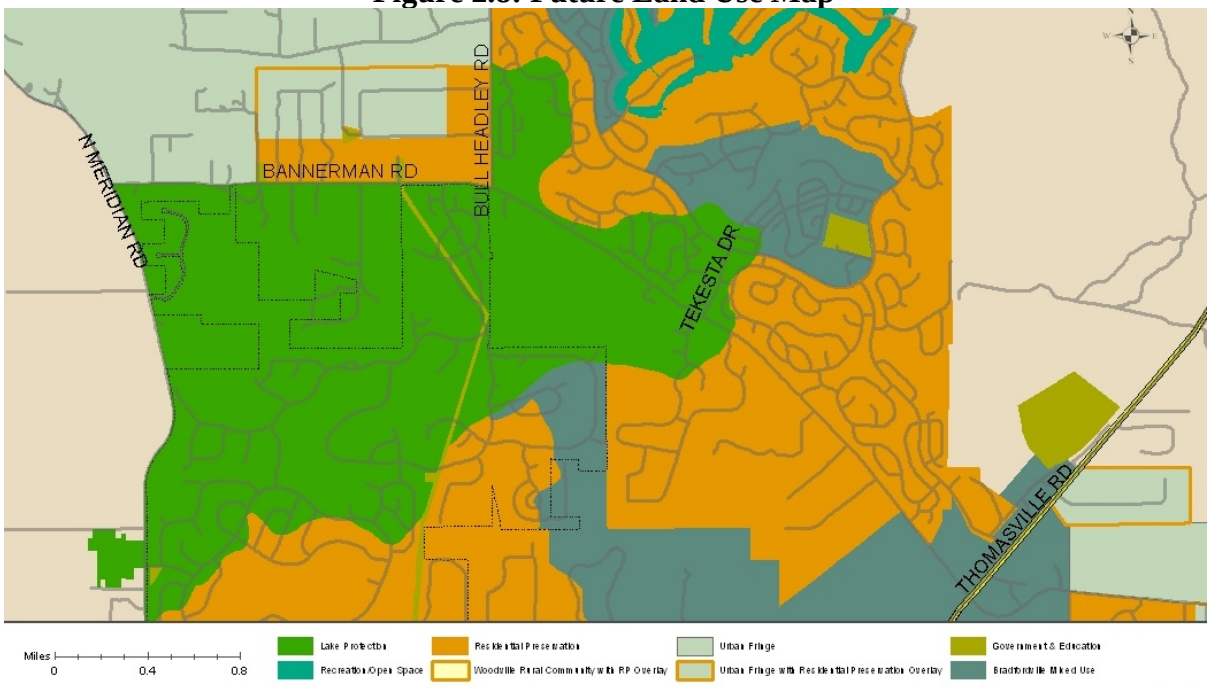


Figure 2.8: Future Land Use Map

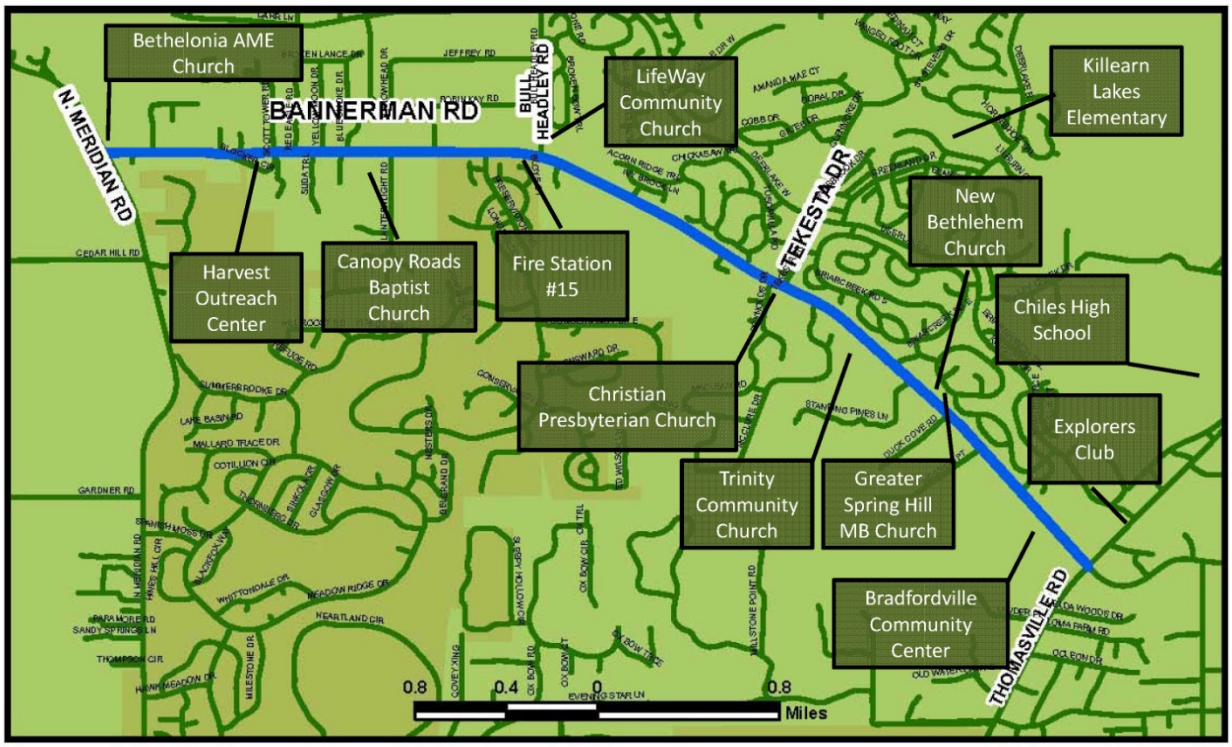


2.2.2. Cultural Features and Community Services

Community Services

Community services and cultural features located along the proposed project (**Figure 2.9)** include Tallahassee Fire Station 15, the Harvest Outreach Center, Christian Presbyterian Church, Bradfordville Community Center, Canopy Roads Baptist Church, Trinity Community Church, Greater Spring Hill MB Church, New Bethlehem Church, Lifeway Community Church, Bethelonia AME Church, and the Explorers Club. There are also several schools in the vicinity of Bannerman Road, including Epiphany Lutheran, Killearn Lakes Elementary, Deerlake Middle School, and Chiles High School.

Figure 2.9: Community Services



2.2.3. Noise

As part of the Bannerman Road Corridor Study, a noise study was conducted in accordance with the FDOT's Project Development and Environment Manual, Chapter 17, "Noise" and with Title 23 CFR (Code of Federal Regulations) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. The noise study focuses on the recommended alternative. The details of the noise analysis can be found in later chapters.

2.2.4. Natural and Biological Features

Floodplains

As shown previously on **Figure 2.3**, "Reported Drainage Problem Locations", areas included within a 100-year floodplain are located within the project limits. There are three areas where Bannerman Road crosses areas within the 100-year floodplain. These locations are near Preservation Road, Tekesta Drive, and Duck Cove Road. If additional fill will be required to be placed within areas of the 100-year floodplain, compensatory mitigation will be required. The 100-year floodplain will not be adversely impacted by the proposed roadway improvements and all stormwater pond locations will be sited to not cause additional impacts.

Wetlands

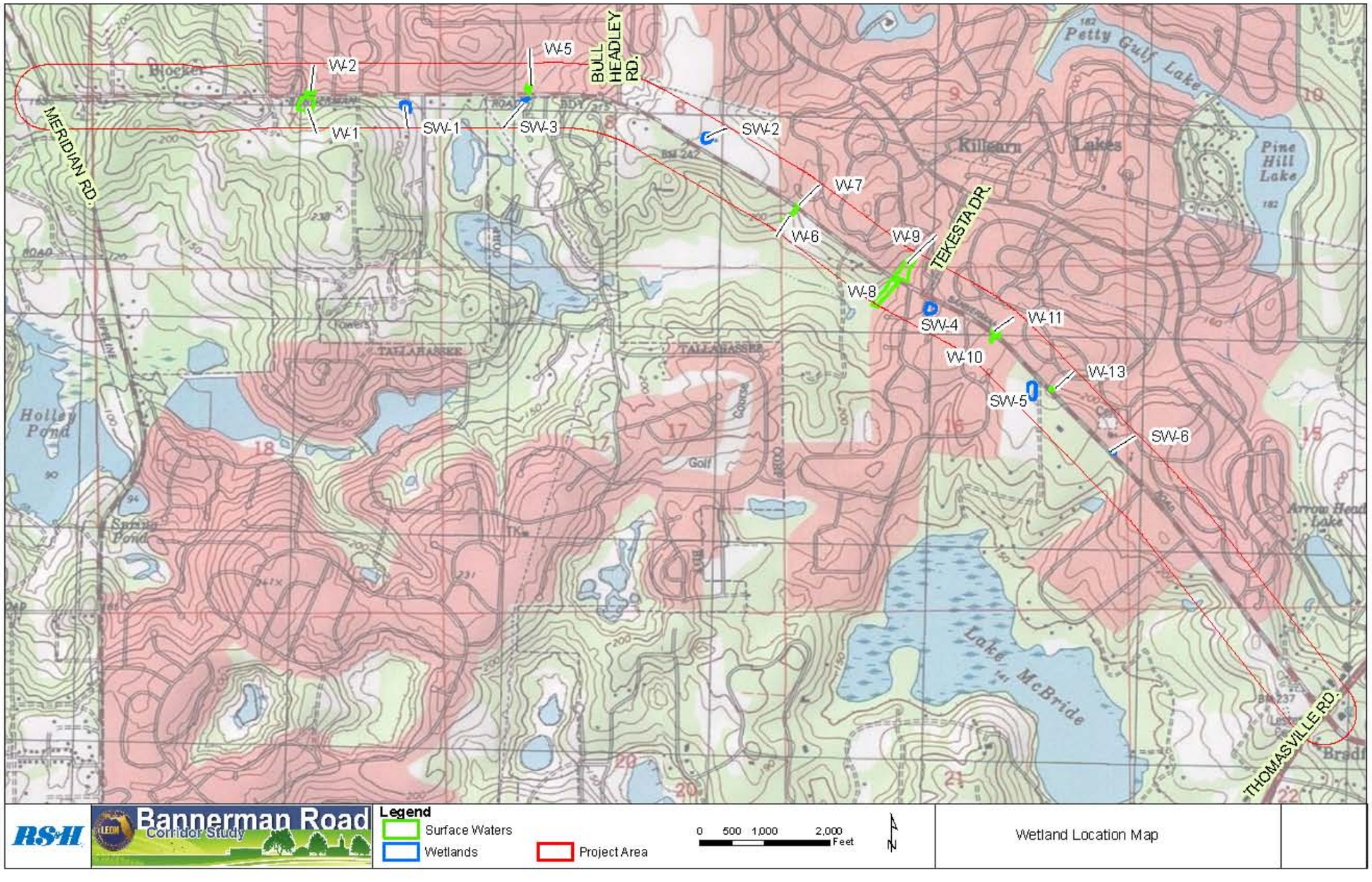
The landward extend of wetlands and surface waters are defined by Florida Administrative Code 62-340. Wetlands within the project limits were evaluated and delineated by a qualified biologist on July 19 and July 21, 2010. Each wetland was classified by the Florida Land Use, Cover and Forms Classification System (FLUCFCS). Wetland quality was assessed using the Uniform Mitigation Assessment Method (UMAM). Within the project limits, ten wetlands and six surface waters were delineated. The locations of these wetlands and surface waters are shown on **Figure 2.10**.

Wetland 1 (W-1) is located south of Bannerman Road, west of Suda Trail. Wetland 1 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). An average UMAM score of 7 can be applied to this wetland. Dominant vegetation within Wetland 1 includes: magnolia (*Magnolia grandiflora*), laurel oak (*Quercus laurifolia*), and sweetgum (*Liquidambar styraciflua*). Wetland 1 is over 2 acres in size and is not isolated.

Wetland 2 (W-2) is located north of Bannerman Road, west of Suda Trail. Wetland 2 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). An average UMAM score of 6 can be applied to this wetland. Dominant vegetation within Wetland 2 includes: magnolia, laurel oak, and sweetgum. Wetland 2 is less than 1 acre in size and is connected via a culvert to Wetland 1.

Wetland 5 (W-5) is located north of Bannerman Road, west of Preservation Road. Wetland 5 is a shallow impoundment which can be classified by FLUCFCS as 616 (Inland Ponds and Sloughs). An average UMAM score of 5 can be applied to this wetland. Dominant vegetation within Wetland 5 includes: cattail (*typhalatifolia*), soft rush (*Juncus effuses*), and smartweed (*polygonum sp.*). Wetland 5 is connected via pipes to a larger pond south of Bannerman Road.

Figure 2.10: Existing Wetlands and Surface Waters



Wetland 6 (W-6) is located south of Bannerman Road, approximately 1,800 feet west of Tekesta Drive. Wetland 6 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). An average UMAM score of 7 can be applied to this wetland. Dominant vegetation within Wetland 6 includes: magnolia, laurel oak, red maple (*Acer rubrum*), and sweetgum. Wetland 6 is less than 1 acre in size and is connected via a culvert to Wetland 7 to the north.

Wetland 7 (W-7) is located north of Bannerman Road, approximately 1,800 feet west of Tekesta Drive. Wetland 7 is a mixed system containing forested and herbaceous components. The herbaceous component is adjacent to Bannerman Road and can be classified by FLUCFCS as 641 (Freshwater Marsh). Due to the proximity of Bannerman Road to this wetland, an average UMAM score of 5 can be applied to this wetland. Dominant vegetation within the marsh component is Carolina willow (*Salix caroliniana*), soft rush and cattail. The forested component can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). Dominant vegetation within the forested component of Wetland 7 includes: magnolia, laurel oak, red maple, and sweetgum. Wetland 7 is less than 1/2 acre in size and is connected via a culvert to Wetland 6 to the south.

Wetland 8 (W-8) is located south of Bannerman Road, approximately 300 feet west of Tekesta Drive. Wetland 8 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). An average UMAM score of 6 can be applied to this wetland. Dominant vegetation within Wetland 6 includes: magnolia, laurel oak, red maple, and sweetgum. Wetland 8 is a flowing wetland system connected via culverts to Wetland 9 to the north.

Wetland 9 (W-9) is located north of Bannerman Road, approximately 300 feet west of Tekesta Drive. Wetland 8 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). Due to the proximity of Bannerman Road to this wetland, an average UMAM score of 5 can be applied to this wetland. Dominant vegetation within Wetland 9 includes: magnolia, laurel oak, red maple, and sweetgum. Wetland 9 also has a deep zone containing open water in the center of the wetland. Wetland 9 is a flowing wetland system connected via culverts to Wetland 8 to the south.

Wetland 10 is located south of Bannerman Road, approximately 1,200 feet east of Tekesta Drive. Wetland 10 is a forested system which can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). An average UMAM score of 7 can be applied to this wetland. Dominant vegetation within Wetland 10 includes: magnolia, laurel oak, red maple, and sweetgum. Wetland 10 is a flowing wetland system connected via culverts to Wetland 11 to the north.

Wetland 11 is located north of Bannerman Road, approximately 1,200 feet east of Tekesta Drive. Wetland 11 is a marsh system which can be classified by FLUCFCS as 641 (Freshwater Marsh). Due to the proximity of Bannerman Road to this wetland, an average UMAM score of 5 can be applied to this wetland. Dominant vegetation within the marsh is Carolina willow, soft rush, primrose willow (*Ludwigia peruviana*) and cattail.

Wetland 13 (W-13) is located north of Bannerman Road, approximately 1,200 feet east of Tekesta Drive. Wetland 13 is a mixed system containing forested and herbaceous components. The herbaceous component is adjacent to Bannerman Road and can be classified by FLUCFCS as 641 (Freshwater Marsh). Due to the proximity of Bannerman Road to this wetland, an average UMAM score of 5 can be applied to this wetland. Dominant vegetation within the marsh component is Carolina willow, primrose willow, soft rush and cattail. The forested component can be classified by FLUCFCS as 617 (Wetland Mixed Hardwoods). Dominant vegetation within the forested component of Wetland 13 includes: magnolia, laurel oak, red maple, and sweetgum. Wetland 13 is less than 1 acre in size.

Prior to construction, an Environmental Resource Permit (ERP) will be required from the Northwest Florida Water Management District (NWFWMD). An Environmental Management Permit will also be required from Leon County Growth and Environmental Management. It is also anticipated that a Department of the Army permit will also be required for impacts to wetlands that meet Clean Water Act jurisdiction from the U.S. Army Corps of Engineers (USACE).

Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) and the Florida Wildlife Conservation Commission (FWC) maintains lists of species which are state and/or federally-listed as threatened or endangered. This list is included in **Appendix F**. During field surveys conducted in July 2010, no state or federally-listed threatened or endangered species were documented within the project limits. Additional surveys will be conducted during the permitting phase of the project.

A review of the FWC Bald Eagle nest locator shows that the nearest Bald Eagle nest (LN-011) is located approximately ½ mile south of the project area, near Lake McBride. It is not anticipated that this project will affect any Bald Eagle nests.

A review of the USFWS Wood Stork colony map shows that this project is within 13 miles of a Wood Stork Core Foraging Area. Additional coordination with the USFWS will be required during the permitting phase of this project. A map of the Core Foraging Areas is included in **Appendix F**.

Conservation Lands

There are no Conservations Lands located within the study area between North Meridian and Thomasville Road (US 319).

Wild Flowers

A field visit confirmed the existence of wild flowers on the north side of Bannerman Road, just east of Quail Common Drive to Sable Chase Subdivision. During final design, efforts should be made to preserve the wild flowers as much as feasible. These areas should be delineated at the time of final design to minimize disturbance.

2.2.5. Permits Required

The following permits may be required:

- Leon County Stormwater Permit
- Leon County Growth and Environmental Management Permit
- NWFWMD/ FDEP Environmental Resource Permit (ERP)
- FDEP National Pollutant Discharge Elimination System Permit
- US Army Corps of Engineers (USACE) Department of the Army 404 Permit

2.2.6. Contamination/Hazardous Wastes

During field evaluations, three potential existing contamination sites were observed including one gasoline service station at 1500 Bannerman Road, and one municipal fire station that occupies two parcels of land just west of Bull Headley Road. The Florida Department of Environmental Protection (FDEP) Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Site Screening shows that there is one site within the project limits with an active petroleum cleanup (Petro #238 located at 1500 Bannerman Road). Due to the proximity of the gas station with the existing Bannerman Road, it is recommended that a Phase I evaluation of this site be conducted during the design of the improvements in this area.

Review of the CERCLA Site Screening shows that there are no brownfields or Superfund sites located within the project area.

3.0 DESIGN CONTROLS AND STANDARDS

3.1. CONTROLS

The roadway has a functional classification of major collector and is not on the Florida Intrastate Highway System (FIHS). The roadway is currently posted for 45 mph for the entire corridor. The estimated design speed of the existing roadway is 45 mph, based on the horizontal and vertical alignments and current design standard. Pedestrian facilities will be provided, in the form of a multi-use path or sidewalks. The current functionality of Bannerman Road can be categorized as having Access Class Level 4.

3.2. STANDARDS

The conceptual roadway design for the Bannerman Road corridor will be based on the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Florida Green Book) including those found in the 2009 Plans Preparation Manual. Design criteria will be established based on the roadway's classification as a "major collector." **Table 3.1** lists the criteria used for the design of the roadway. The established level of service (LOS) for the design year has been set at LOS "D".

Table 3.1: Design Criteria

Functional Element	Design Value			Source
Roadway Segment	Meridan to Bull Headley	Bull Headley to Tekesta	Tekesta to Thomasville	
Facility Type	Major Collector	Major Collector	Major Collector	
Adopted Level of Service	D	D	D	
Design Speed	45 mph	45 mph	45 mph	PPM, Table 1.9.1
Access Class	4 (Non-Restrictive)	4 (Non-Restrictive)	4 (Non-Restrictive)	FDOT Access Mgmt Standards
Basic Number of Lanes	2	2	4	Future Capacity Analysis
Right Turn Lane Guidance	80/110 rights/hour - 80 for 2-lane	80/110 rights/hour - 80 for 2-lane	80/110 rights/hour - 110 for 4-lane	Median Handbook
Cross-Section Element	Design Value			Source
Minimum Lane Widths	12 [1]	12 [1]	12 [1]	PPM, Table 2.1.1
Minimum Bicycle Lane Widths	5	5	5	PPM, Table 2.1.2
Turning (LT/RT/MED)	11 [2,3]	11 [2,3]	11 [2,3]	PPM, Table 2.1.1
Pavement Cross Slopes	2% min.	2% min.	2% min.	PPM, Figure 2.1.1
	3% max.	3% max.	3% max.	
Shoulders	Outside - 10', Inside - 8'	Outside - 10', Inside - 8'	Outside - 10', Inside - 8'	PPM, Table 2.3.4
Minimum Border Width	≤ 45 mph - 33'	≤ 45 mph - 33'	≤ 45 mph - 33'	PPM, Table 2.5.1
Minimum Median Width	22'	22'	22'	PPM, Table 2.2.1
Minimum Sidewalk Width	5', 6' if adjacent to curb	5', 6' if adjacent to curb	5', 6' if adjacent to curb	PPM, Chapter 8.3.1
Minimum Multi-Use Path Width [4]	6' 1-direction, 12' 2-direction	6' 1-direction, 12' 2-direction	6' 1-direction, 12' 2-direction	PPM, Chapter 8.6.2
Horizontal Element	Design Value			Source
Max. Deflection w/o curve, with c&g	1° 00' 00"	1° 00' 00"	1° 00' 00"	PPM, Table 2.8.1a
Max. Deflection w/o curve, w/o c&g	0° 45' 00"	0° 45' 00"	0° 45' 00"	
Max. Deflection through intersection	3° 00' 00"	3° 00' 00"	3° 00' 00"	PPM, Table 2.8.1b
Min. Length of curve	15V = 675', not <400'	15V = 675', not <400'	15V = 675', not <400'	PPM, Table 2.8.2a
Max. Curvature	10° 15'	10° 15'	10° 15'	PPM, Table 2.8.3
Max. curvature w/o Super elevation	2° 45'	2° 45'	2° 45'	PPM, Table 2.8.4
Super elevation	e max, =0.05	e max, =0.05	e max, =0.05	PPM, Table 2.8.3
Clear Zone				PPM, Table 2.11.3
Above Ground Fixed Objects (Poles, trees,etc.)	4' from face of curb	4' from face of curb	4' from face of curb	PPM, Table 2.11.3
Breakaway Objects (Fire Hydrants)	1.5' from face of curb	1.5' from face of curb	1.5' from face of curb	PPM, Table 2.11.3
Median Opening (Restrictive)				
Directional	660'	660'	660'	FDOT Access Mgmt Standards
Full Opening	2,640'	2,640'	2,640'	FDOT Access Mgmt Standards
Vertical Element	Design Value			Source
Grades	8% max.	8% max.	8% max.	PPM, Table 2.6.1
Max. Change in Grade w/o VC	0.70%	0.70%	0.70%	PPM, Table 2.6.2
Min. Stopping Sight Distance	Min. L=360' (for grades 2% or less)	Min. L=360' (for grades 2% or less)	Min. L=360' (for grades 2% or less)	PPM, Table 2.7.1
Crest Vertical Curve	K = 98	K = 98		PPM, Table 2.8.5
	Min. L = 135'	Min. L = 135'	Min. L = 135'	
Sag Vertical Curve	K = 79	K = 79	K = 79	PPM, Table 2.8.6
	Min. L = 135'	Min. L = 135'	Min. L = 135'	
Mininum Grade	0.3% (curb & gutter sections)	0.3% (curb & gutter sections)	0.3% (curb & gutter sections)	PPM, Table 2.6.4
Roadway Base Clearance	2' above D.H.W.	2' above D.H.W.	2' above D.H.W.	PPM, Table 2.6.3

Notes: PPM = Plans Preparation Manual (Volume 1 - English) (January 2009, Revised 2010), Florida Department of Transportation

V is the design speed (mph)

1. 11 ft. for low volume ADT. See Section 2.1.1 of the PPM Volume 1.
2. 12 ft. lanes for all 2-lane rurual
3. With severe R/W controls, 10 ft. turning lanes may be used where design speeds are 40 mph or less and the intersection is controlled by traffic signals. Median turn lanes shall not exceed 15 ft.
4. Only under severe constraints should providing less than 12 feet be considered

4.0 DESIGN TRAFFIC

The purpose of this section is to provide Leon County with the traffic information necessary to assist in making decisions and conducting capacity evaluations related to the Bannerman Road Corridor Study. The study involves the review of existing and future traffic characteristics along Bannerman Road from North Meridian Road, east to Thomasville Road.

This section will document the following:

- Existing traffic conditions
- The methodology used to forecast future year traffic volumes
- The traffic operations analysis for future year conditions
- Summary of geometry requirements for future year conditions

Figure 4.1 depicts the study area and existing lane configuration for both Bannerman Road and the signalized intersections of North Meridian Road, Bull Headley Road, Tekesta Drive, and Thomasville Road. Segment 3, from Tekesta Drive to Thomasville Road is already four-laned approximately 1,000 feet west of the intersection.

Analysis Years

The following traffic analysis years have been identified for the Bannerman Road Corridor Study:

- Existing Year: 2010
- Design Year: 2035

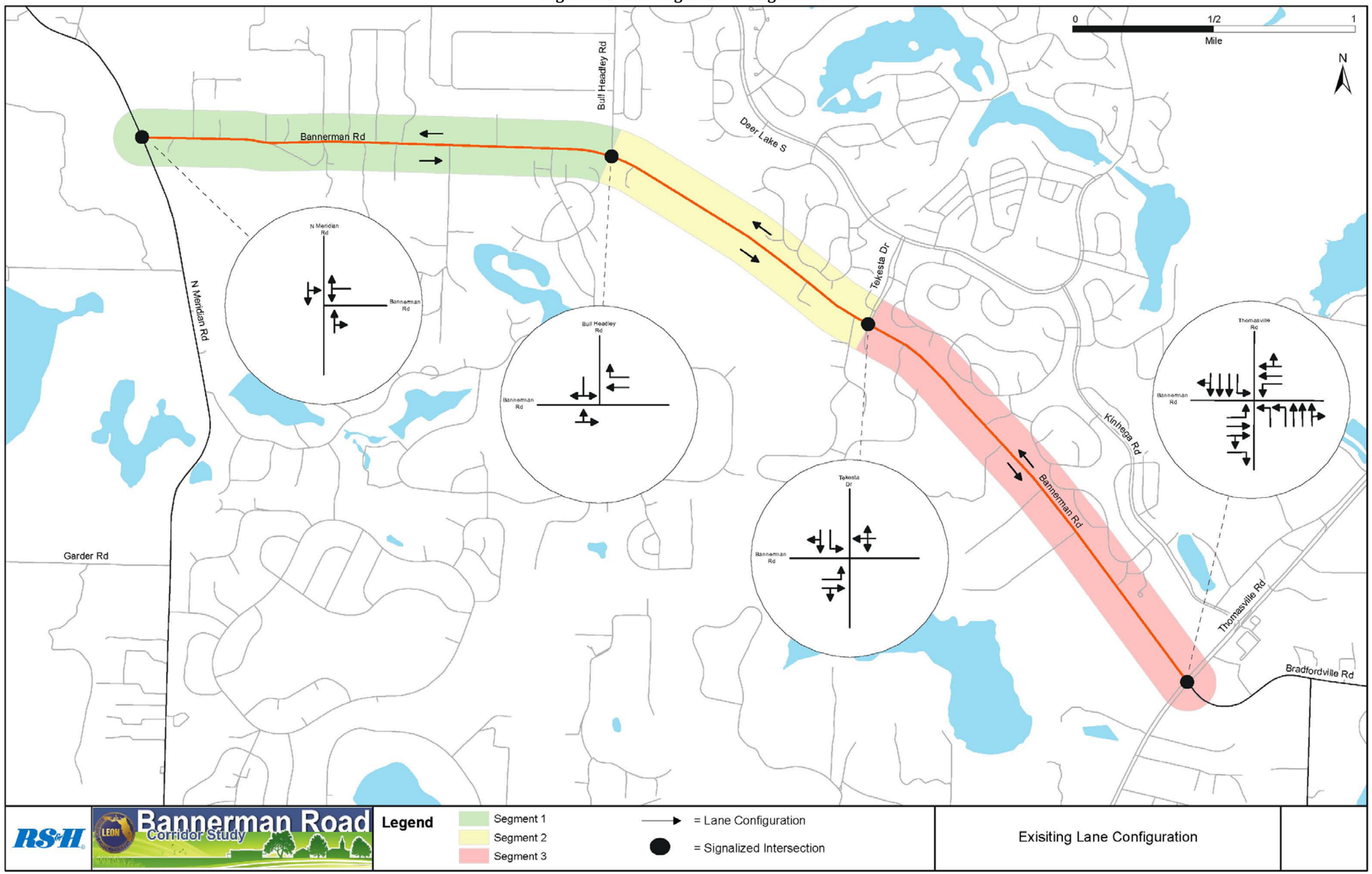
Level of Service Criteria

The term "level of service" (LOS) is defined with six ranges from "A" (best) to "F" (worst) used to identify roadway facility performance. Bannerman Road is a two-lane county highway facility with a designated functional classification of Major Collector as outlined by the County Comprehensive Plan. The minimum LOS criterion for this designation is LOS D.

Analysis Procedures

Highway Capacity Manual (HCM) 2000 methodologies were used for the operational analysis of roadway segments and study intersections. The operational analysis of the roadway segments was completed using Highway Capacity Software (HCS+) version 5.5. The operational analysis for the study intersections was completed using Synchro 7.0. The Synchro intersection analysis results documented in this study follow HCM 2000 methodologies.

Figure 4.1: Existing Lane Configuration



4.1. EXISTING TRAFFIC CONDITIONS

The following section provides an evaluation of the existing conditions within the Bannerman Road corridor study area. The discussion items include transportation systems information, existing traffic data, and existing operating conditions.

The existing transportation network within the study area consists of arterials and collectors. **Table 4.1** summarizes the features of the major roadways including number of lanes, roadway classifications, and primary roadway functions.

Table 4.1: Roadway Functional Classification

Roadway Name	Basic # of Lanes	Roadway Classification	Primary Function
Bannerman Road	2	Major Collector	Access to primary arterials including Thomasville Road
Thomasville Road	6	Principal Arterial	Primary north-south arterial in the project area, links North Leon County to I-10 and downtown
Tekesta Drive	2	Minor Collector	Access to residential subdivisions and small commercial developments
Bull Headley Road	2	Minor Collector	Access to residential subdivisions and small commercial developments
North Meridian Road	2	Minor Arterial	North-south arterial in the project area, links North Leon County to downtown Tallahassee

Data Collection

The traffic assessment included data collection efforts from multiple sources. The data sources within the project study area included the following:

- Florida Department of Transportation (FDOT) *Florida Traffic Online 2009*
- Existing Plans, Programs and Project Lists from FDOT
- Regional Travel Demand Models

In addition, supplemental turning movement counts, roadway link volume counts, and field measurements were collected for the study.

Base Traffic Data and Traffic Factors

Field traffic counts provided the source of existing traffic for this study area. 72-hour bi-directional machine counts were collected at three locations in June/July 2010. Peak-period turning movement counts (TMCs) were collected for the AM and PM peak-period at the intersections of Thomasville Road, Tekesta Drive, Bull Headley Road and North Meridian Road in July 2010. In addition, ten (10) 48-hour directional machine counts were collected at the signalized intersections in December 2010. The count locations are summarized in

Table 4.2, while the raw (unadjusted) traffic counts are included in **Appendix G**.

Table 4.2: Existing Year 2010 Traffic Data Collection Summary

Count Location	Date	Count Type
Bannerman Road between Thomasville and Tekesta	June/July 2010	72-Hour Machine Count
Bannerman Road between Tekesta and Bull Headley	June/July 2010	72-Hour Machine Count
Bannerman Road between Bull Headley and Meridian	June/July 2010	72-Hour Machine Count
Bannerman Road and Thomasville	July 2010	Peak Period Turning Movement Counts
Bannerman Road and Tekesta	July 2010	Peak Period Turning Movement Counts
Bannerman Road and Bull Headley	July 2010	Peak Period Turning Movement Counts
Bannerman Road and Meridian	July 2010	Peak Period Turning Movement Counts
Bannerman Road Corridor	December 2010	48-Hour Intersection Approach Machine Count

Information from *Florida Traffic Online*, a website service provided by FDOT Transportation Statistics Office, along with historical traffic counts performed by Leon County were used to check the reasonableness of the existing traffic counts.

4.2. EXISTING TRAFFIC OPERATIONS

Daily Traffic

Field traffic counts provided the source of existing traffic for the Bannerman Road study area. These raw traffic counts were adjusted using a seasonal adjustment factor to obtain 2010 AADT volumes for Segments 1 through 3. **Table 4.3** summarizes the AADTs calculated for the Existing Year (2010).

Table 4.3: Existing (2010) AADT

Segment	AADT
1: North Meridian Road to Bull Headley Road	4,131
2: Bull Headley Road to Tekesta Drive	8,958
3: Tekesta Drive to Thomasville Road	17,044

Turning Movement Counts

Three-hour AM and PM peak-period turning movement counts (TMCs) were collected at the signalized intersections in July of 2010. The counts, tabulated in 15-minute increments, were used to determine the intersection AM and PM peak hour traffic movements. The Existing Year 2010 peak hours were found to be 7:30-8:30 AM and 5:30-6:30 PM. The raw traffic counts are provided in **Appendix G**.

The results of the Existing Year 2010 operational analysis are discussed in the following section. Analysis worksheets for the Existing Year 2010 are provided in **Appendix H**.

Segment Operational Analysis

The results of the Existing Year 2010 segment analysis are summarized in **Table 4.4**. In the existing conditions, Segments 1 and 2 on Bannerman Road operate at acceptable LOS for the peak hour. Segment 3 operates at LOS E under existing traffic conditions, which does not meet established standards and would trigger the need for capacity improvements.

Table 4.4: Existing (2010) Segment Peak Hour LOS

Segment	Existing (2010)
1	C
2	D
3	**E**

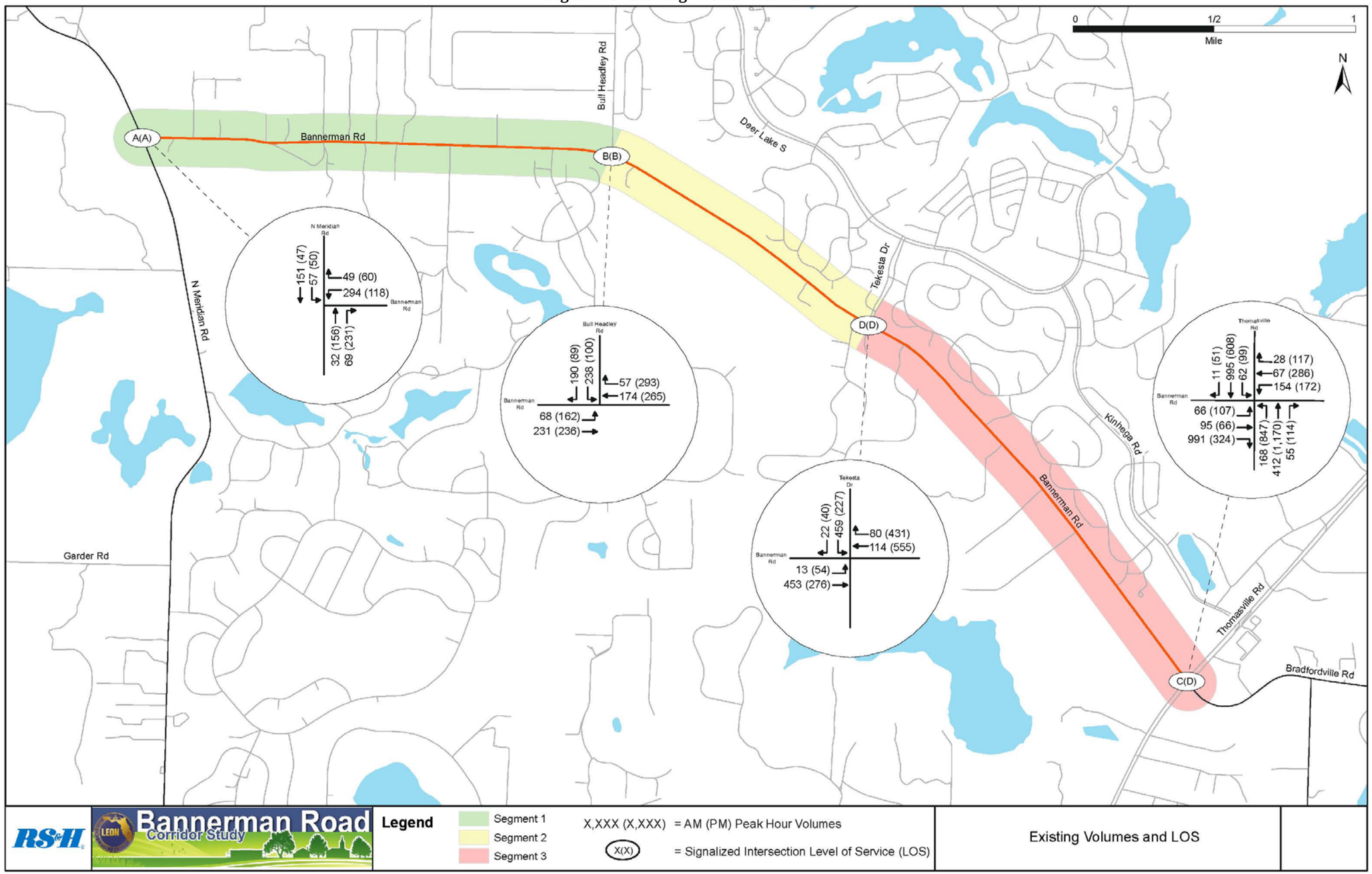
Intersection Operational Analysis

The Existing Year 2010 intersection analysis is summarized in **Table 4.5**. In 2010, the study intersections operate within established LOS standards. **Figure 4.2** depicts the existing TMCs and LOS results.

Table 4.5: Existing (2010) Intersection Peak Hour LOS

Intersection	AM	PM
North Meridian Road	A	A
Bull Headley Road	B	B
Tekesta Drive	D	D
Thomasville Road	C	D

Figure 4.2: Existing Volumes and LOS



4.3. TRAFFIC PROJECTIONS

4.3.1. Traffic Projections Methodology

Traffic forecasts were developed based on procedures outlined in the FDOT Project Traffic Forecasting Handbook (Design Traffic Procedure 525-030-120-f). As part of the forecasting process, future design traffic must be analyzed to determine any capacity shortfalls. The standard process used to determine growth rates and develop design traffic is outlined below:

1. Compile available forecast sources
2. Refine sources to include those most applicable to the study area
3. Selection of the growth rate for use in the study
4. Application of traffic factors to derive design traffic

It should be noted, once available sources have been compiled and refined to include those most applicable to the study area, a single growth rate will be determined from this process and used in the future traffic analysis portion of this memorandum.

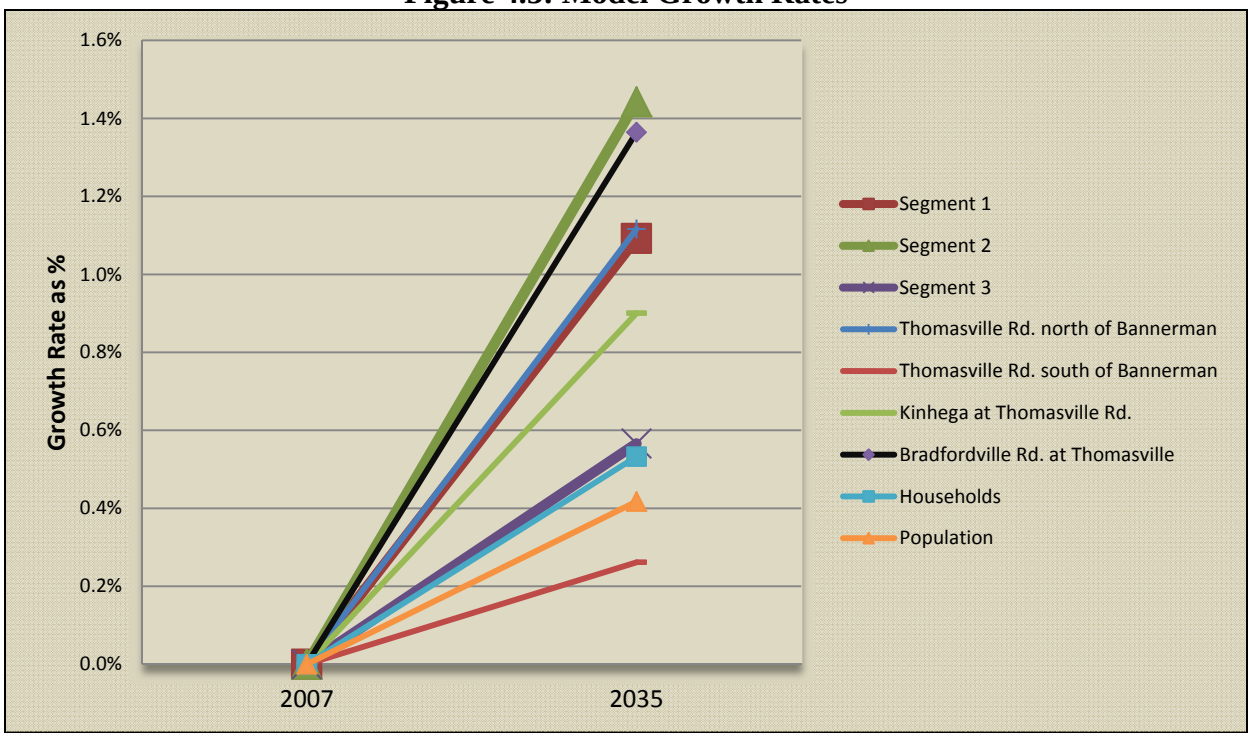
4.3.2. Available Traffic Forecasting Sources

Traffic forecasts are available from a variety of sources and tools. One tool available for use in the Bannerman Road Corridor Study is the Capital Region Transportation Planning Agency (CRTPA) regional travel demand model. Travel demand models are established by using a locally adopted Florida Standard Urban Transportation Model Structure (FSUTMS) for the area as provided by the local Transportation Planning Organization (TPO). In addition to the regional travel demand models, area traffic projections can be developed from historical traffic data, socioeconomic data, historical population data, or other data from local sources such as the Chambers of Commerce or Economic Development Council. The following sources have been compiled and reviewed:

- CRTPA Forecast
- Regional Population Data
- Regional Household Data
- Historical Traffic Data along Bannerman Road

Figure 4.3 provides a comparison of the individual rates associated with the sources outlined above extracted from the CRTPA regional demand model. Further refinement of the growth rates are outlined in subsequent sections of this report.

Figure 4.3: Model Growth Rates



Travel demand models include detailed socioeconomic data such as population, housing, and land use characteristics. In addition to socioeconomic data, capital improvements currently adopted in the cost feasible Long Range Transportation Plan (LRTP) are included in the future year network. The base model year for CRTPA model is 2007 and the future year is 2035.

In addition to model volumes, the County and FDOT maintain count sites located on the study area corridor. FDOT portable count sites monitor and record traffic and provide an accurate account of historical traffic. **Figure 4.4** depicts the historical traffic between Tekesta Drive and Thomasville Road.

Figure 4.4: Historical Traffic

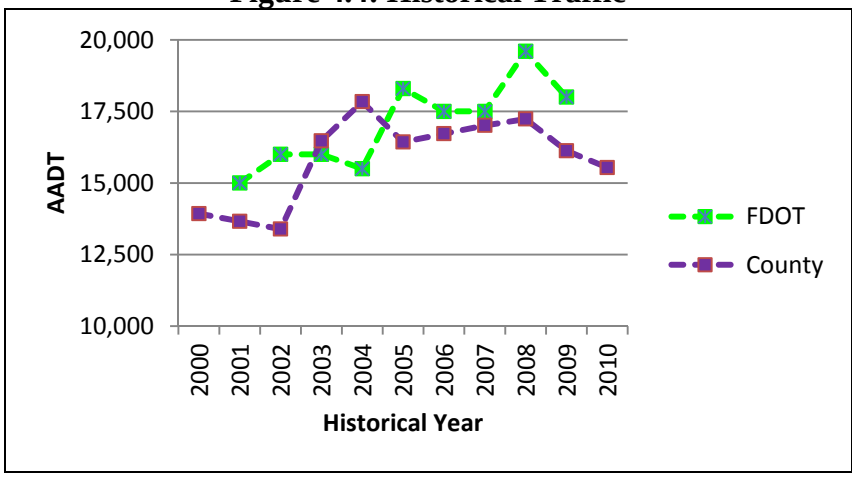


Table 4.6 provides the historical growth rates associated with the traffic counts. The historical growth rate derives from the past nine years of FDOT maintained traffic data and the past eleven years of County maintained traffic data. The difference in historical rates may be due to the recent commercial developments at the southwest corner of Thomasville Road and Bannerman Road. FDOT counts are obtained near the Thomasville Road intersection along Bannerman Road and may be influenced by traffic accessing the new commercial developments.

Table 4.6: Historical Growth Rate

FDOT Count Site	
Trend Annual Historic Growth Rate:	3.04%
County Count Site	
Trend Annual Historic Growth Rate:	1.86%

Figure 4.5: Adopted Area Growth Rate

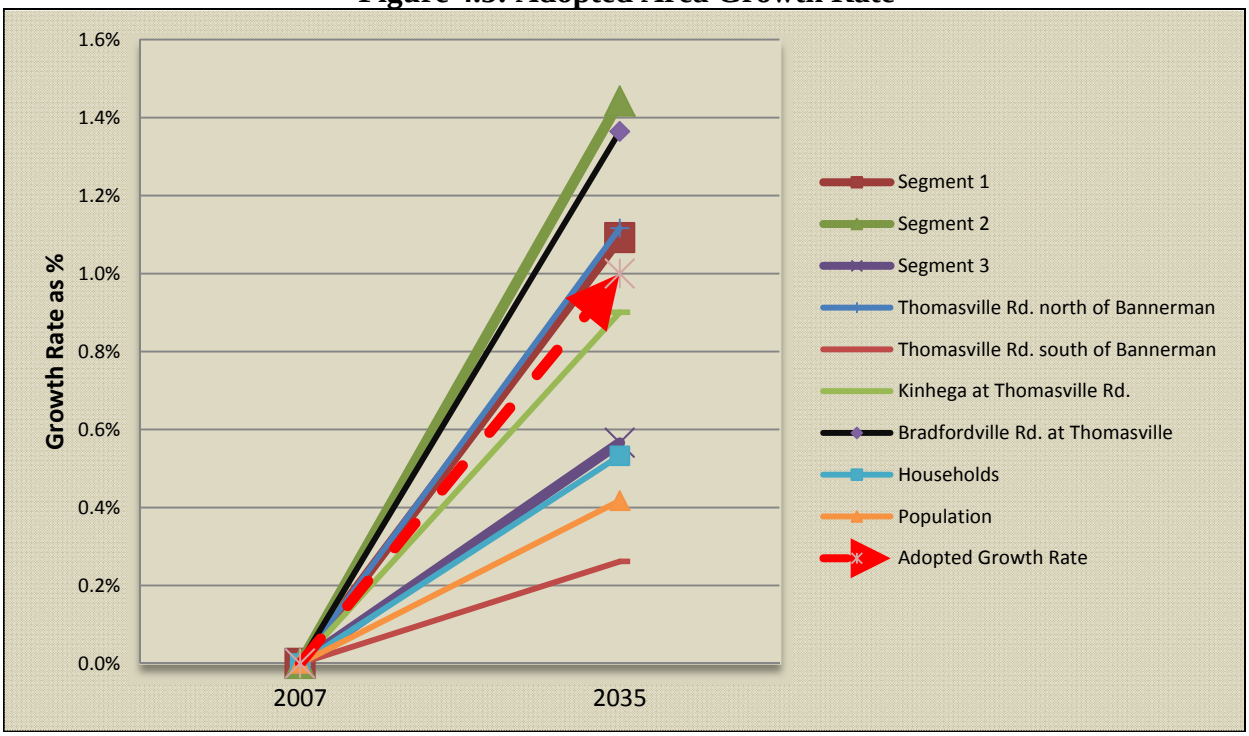


Figure 4.5 above depicts the adopted growth rate in red. A one percent (1%) growth rate was determined most applicable and adopted for use in the Bannerman Road Corridor Study. The adopted rate of one percent is generally consistent with area wide growth rates, which includes data for traffic, population, and number of households.

4.3.3. Traffic Factors

The factors used for design traffic analysis included the K_{30}, D_{30}, and T_f. The K_{30} is the proportion of the AADT occurring during the 30th highest hour of the year. D_{30} is the proportion of traffic in the 30th highest hour of the year traveling in the peak direction. The T_f factor is the percentage of truck traffic occurring during the peak hour and is estimated as ½ of the 24-hour truck percentage (T_{24}). **Table 4.7** summarizes the traffic factors for this study.

Table 4.7: Traffic Factor Summary

Location	K30 (%)	D30 (%)	T24 (%)	T_f [1] (%)
Bannerman Road	11.12	65.00	6.00	3.00

1. Peak Hour Truck Factors are calculated as ½ the T_{24} and rounded to the nearest integer.

Source: Measured counts and *Florida Traffic Online*

4.4. No Build Alternative

Design Year 2035 traffic forecasts were produced using the adopted growth rates and traffic factors. The traffic forecasts were developed for Bannerman Road and the signalized

intersections for this corridor study. **Table 4.8** shows the comparison between the existing year 2010 AADTs and the future year 2035 AADTs along Bannerman Road.

Table 4.8: Project Forecasted AADT

Segment	2010 Existing[1]	2035[2]
1	4,131	5,300
2	8,958	11,600
3	17,044	22,000

1. Project counts measured in June/July of 2010
2. AADT rounded to the nearest 100.

4.4.1. Projected Levels of Service

Highway Capacity Manual (HCM) 2000 methodologies were used for the operational analysis of individual roadway elements, i.e., roadway segments and study intersections. The operational analysis of the roadway segments was completed using Highway Capacity Software (HCS+) version 5.5. The operational analysis for the study intersections was completed using Synchro 7.0. The Synchro intersection analysis results documented in this study follow the HCM methodologies.

Segment Operational Analysis

The results of the Design Year 2035 segment analysis are summarized in **Table 4.9**. The future AADTs were converted to directional design hour volumes (DDHVs) by applying the traffic factors outlined. In the future conditions, Segments 1 and 2 on Bannerman Road operate at acceptable LOS. Segment 3 operates at LOS F under the No-Build alternative, not meeting established standards triggering the need for capacity improvements.

Table 4.9: No Build 2035 Segment Design Hour LOS

Segment	Design (2035)
1	C
2	D
3	**F**

Intersection Operational Analysis

The future intersection analysis is summarized in **Table 4.10**. By 2035, the Tekesta Drive intersection will operate at LOS E during AM and PM Peak conditions, which is not consistent with established LOS standards. Thomasville Road will also operate at LOS E during PM peak conditions, triggering a recommendation for further study. **Figure 4.6** depicts the intersection TMCs and operational results.

Table 4.10: Future No Build (2035) Intersection Peak Hour LOS

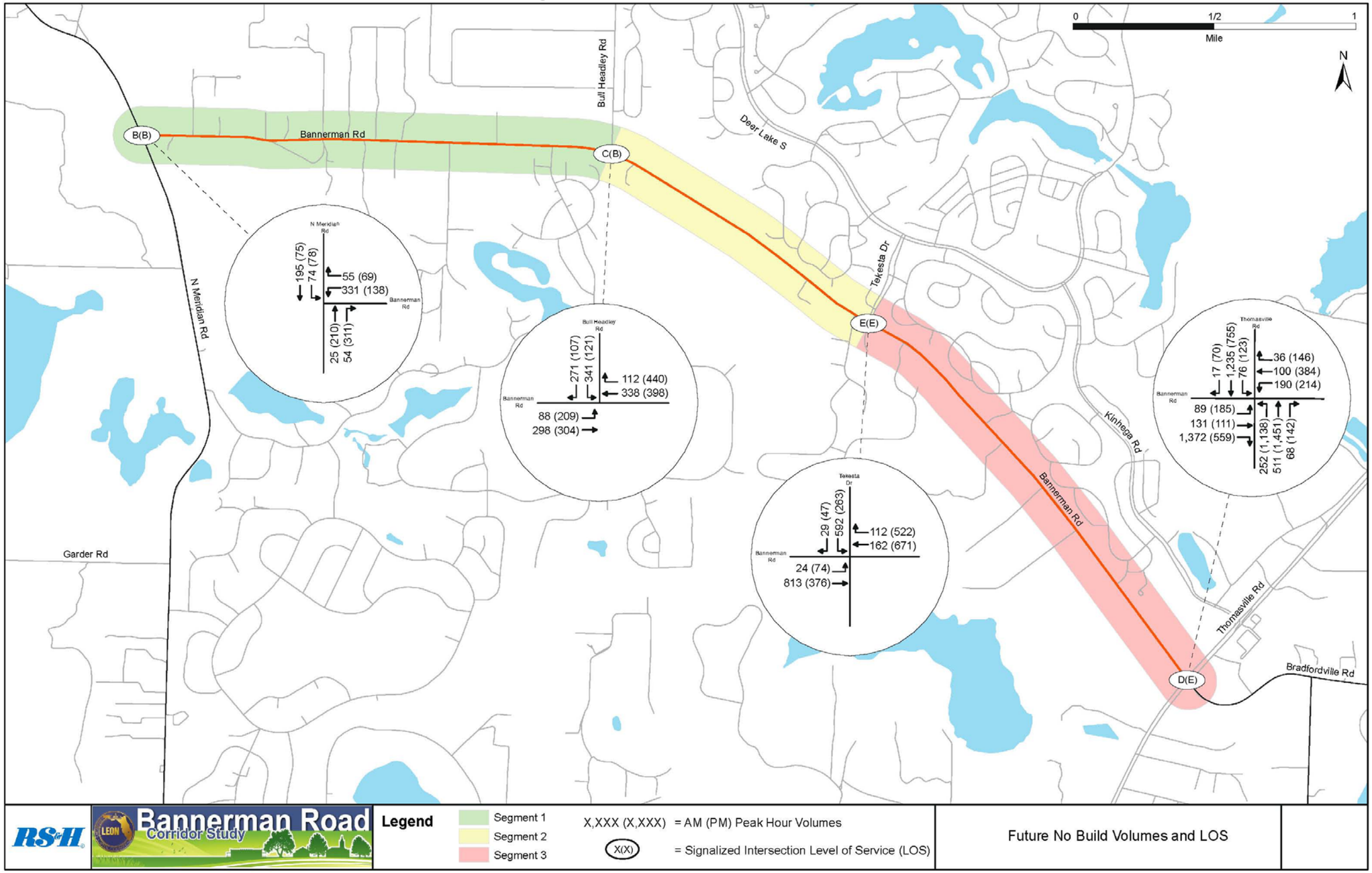
Intersection	AM	PM
North Meridian Road	B	B
Bull Headley Road	C	B
Tekesta Drive	**E**	**E**
Thomasville Road	D	**E**

No Build Results

The No Build analysis represents estimated future traffic operations under the existing geometric (travel lane) configuration. The future travel demand warrants the need to widen Bannerman Road from Tekesta Drive, to Thomasville Road. The projected LOS F for Segment 3 and resulting LOS E for the signalized intersection at Tekesta Drive does not meet established standards and will not adequately service its users.

The future year analysis on Bannerman Road between Meridian Road and Tekesta Drive indicates that the existing geometry will be sufficient to maintain level of service standards, and no widening in those segments will be required.

Figure 4.6: 2035 No Build Volumes and LOS



4.5. Build Projected Operational Results

Design Year 2035 traffic forecasts were produced and model runs were conducted for the base year and future year. The No Build results identified the need to widen Bannerman Road from Tekesta Drive to Thomasville Road. The operational analysis within this section will focus only on Segment 3 and the signalized intersections of Tekesta Drive and Thomasville Road.

4.5.1. Projected Levels of Service

Highway Capacity Manual (HCM) 2000 methodologies were used for the operational analysis of individual roadway elements, i.e., roadway segments and study intersections. The operational analysis of the roadway segments was completed using Highway Capacity Software (HCS+) version 5.5. The operational analysis for the study intersections was completed using Synchro 7.0. The Synchro intersection analysis results documented in this study follow the on HCM methodologies.

Segment Operational Analysis

The operational results of the Build (four lane widening) Design Year 2035 LOS analysis are summarized in **Table 4.11**. Under projected future conditions, Segment 3 along Bannerman Road will operate at LOS B as a 4-lane facility, exceeding the established standards.

Table 4.11: Build 2035 Segment Design Hour LOS

Segment	Design (2035)
3	**B**

Intersection Operational Analysis

The future Build intersection analysis is summarized in **Table 4.12**. By 2035, under the Build scenario, the study intersection of Tekesta Drive will operate at LOS C during both AM and PM Peak conditions, consistent with established LOS standards. Thomasville Road will operate at LOS E during AM and PM peak conditions, triggering a recommendation for further study. The Bannerman approach to Thomasville is operating at the adopted level of service, and additional capacity improvements along Thomasville Road and Bradfordville Road are out of the project area study limits. **Figure 4.7** depicts the TMCs and operational results. **Figure 4.8** depicts the Build lane geometry.

Table 4.12: Future Build (2035) Intersection Peak Hour LOS

Intersection	AM					PM				
Approach	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
Tekesta Drive	C	B	A	C	**C**	B	D	A	B	**C**
Thomasville Road	D	C	E	F	**E**	D	F	D	F	**E**

Figure 4.7: 2035 Build Volumes and LOS

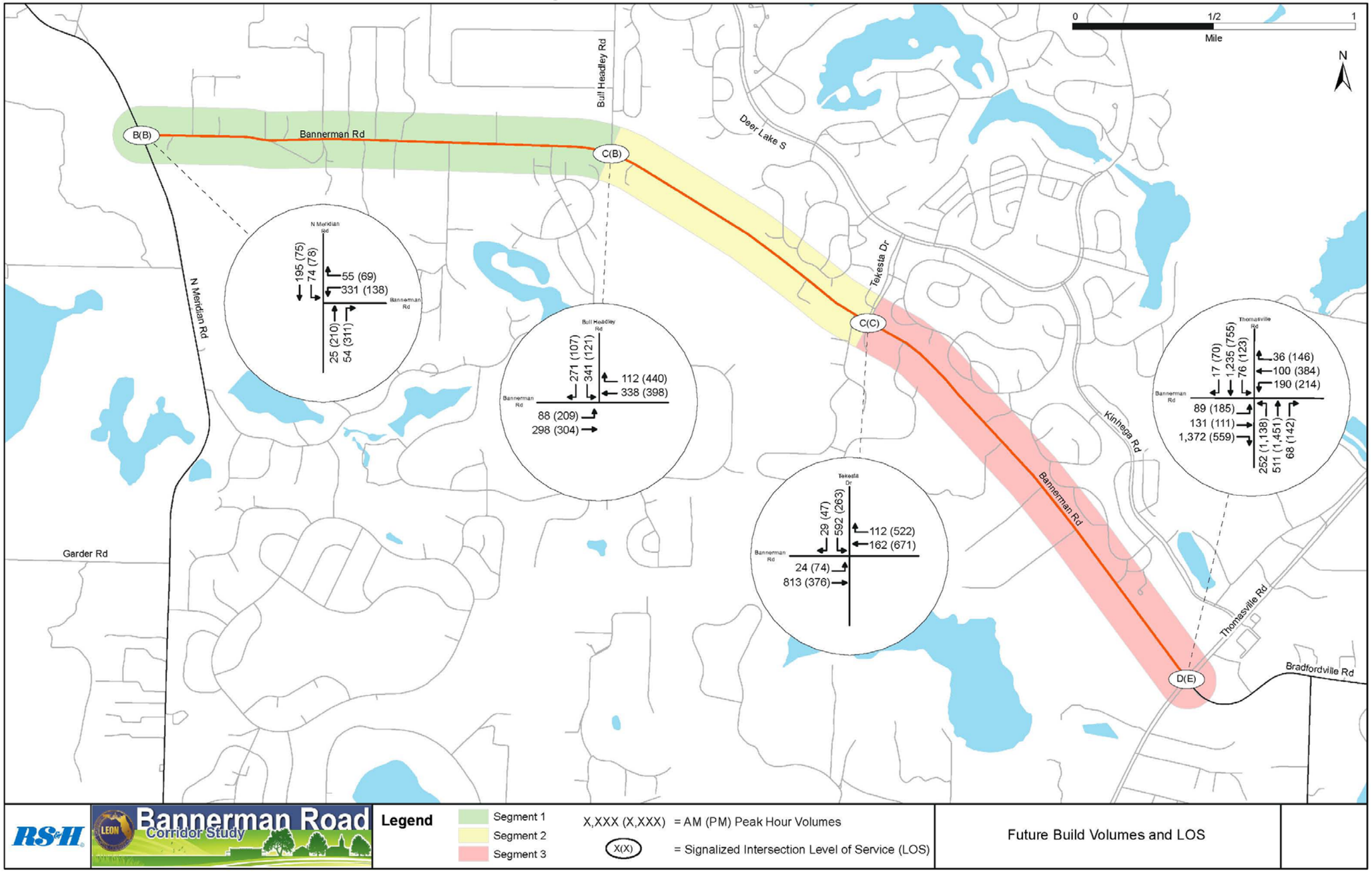
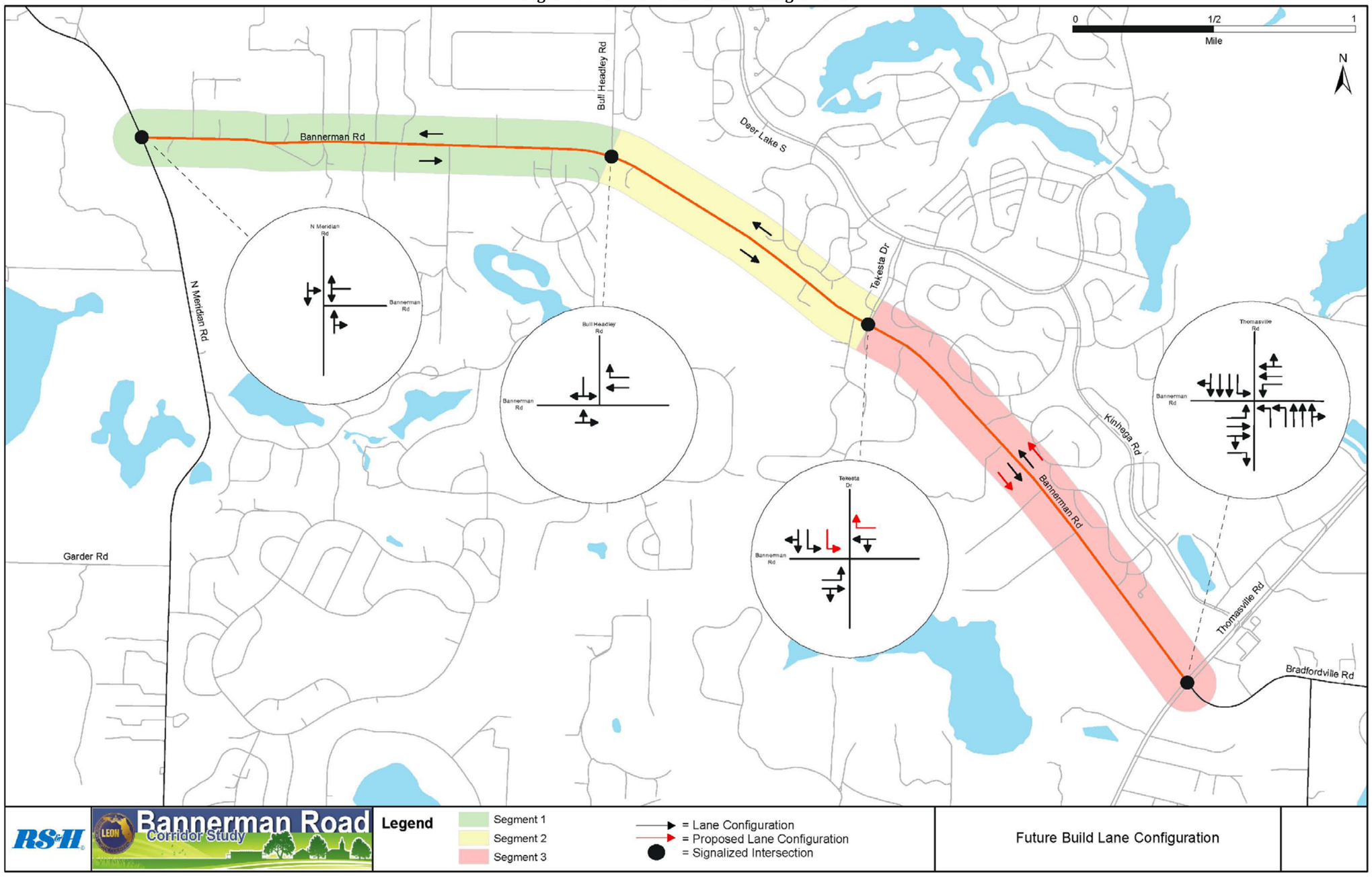


Figure 4.8: Future Build Lane Configuration



4.6. Traffic Operations Summary

The substandard operating conditions within the Corridor Study Area by the 2035 Design Year warrant the widening of Bannerman Road between Tekesta Drive and Thomasville Road. The Build alternative, which includes a 4-lane configuration, should replace the existing 2-lane configuration. Under Build conditions with the additional improvements at the Tekesta Drive intersection, the intersection is expected to operate at LOS C or better while Bannerman Road is expected to operate at LOS B or better by the 2035 Design Year.

5.0 DRAINAGE DESIGN

5.1. Project Coordination

The project design has been coordinated through several meetings, email exchanges and phone conversations. These included coordination with RS&H Team members, regulatory agencies including Northwest Florida Water Management District (NWFWMD), Leon County Public Works (LCPW) and Leon County Growth and Environmental Management (LCGEM), as well as soliciting public input at CAC Meetings and Public Meetings. A conceptual level stormwater design was developed for each build alternative. The Bradfordville Study Area (BSA) and Lake Jackson requirements were determined to be the most difficult to meet, therefore they were used as the initial design criteria for retention. All remaining criteria were then checked with the proposed design to ensure that all permit requirements were met.

5.2. Design Approaches and Methodology

Bradfordville Study Area Continuous Analysis Retention

The BSA continuous analysis is an option to demonstrate that a SWMF design will perform adequately over a historic 40-year design period instead of proving recovery of the on-line BSA retention volume within 72 hours. The low infiltration rates in the Bannerman Road corridor make recovery within 72 hours impractical. The continuous analysis spreadsheets and rainfall data were provided by LCGEM. It was found that a significantly greater storage volume than the required BSA retention volume is required to meet the continuous analysis requirement. The infiltration rates in the BSA continuous analysis spreadsheets were based on the June 2011 Preliminary Infiltration Investigation report included in **Appendix C**. Example calculations showing continuous analysis spreadsheets are included in the Drainage Report in **Appendix A**.

Lake Jackson Basin Protection Area Retention Calculation

Section 10-4.301(4) of the Leon County codes provides an additional requirement for non-single-family residential developments within the Lake Jackson Basin protection area. Much of Segments 1 & 2, and Basin 1 in Segment 3 fall within the Lake Jackson Basin. Any non-single-family residential development is required to retain the post-development stormwater

from storms up to and including the 50-yr 24-hr event. Improvements such as sidewalks or the proposed 10' trail would serve the existing residential development throughout the corridor. All alternatives in Segments 1 & 2 and the trail in Segment 3 would serve to connect the existing residential development and provide non-motorized access on the corridor. Based on this, it was established that the above improvements would not be subject to the Lake Jackson Basin protection area requirement.

The Lake Jackson Basin retention volume was calculated using the post development SCS curve number for the applicable project area and was run with the SCS Method within Hydraflow Express 2006. Half of this volume must recover within seven days, and the remainder within 30 days per the Leon County codes. The required retention volume was the largest stormwater volume requirement for the entire corridor, and was the determining factor for potential SWMF sizes within the basins draining to Lake Jackson. Only one SWMF is proposed within the Lake Jackson Basin due to the alternatives chosen by the Citizens Advisory Committee, in Basin 1 of Segment 3.

LCGEM has indicated that the continuous analysis procedure may also be used to demonstrate capacity and recovery of the Lake Jackson Basin retention requirement. The infiltration rate in the Lake Jackson continuous analysis spreadsheets was based on the June 2011 Preliminary Infiltration Investigation report included in **Appendix C**. The infiltration rate was chosen to be the lowest feasible calculated rate from the Segment to develop a conservative pond size estimate and to account for the improbability of finding a large pond site with consistently good infiltration rates. Example calculations showing the Lake Jackson volume and continuous analysis spreadsheets are included in the Drainage Report in **Appendix A**.

Leon County and NWFWMD Pre-Post Detention

The pre-post detention volume requirement was calculated by comparing the pre-construction runoff to the post-construction runoff using the SCS method in Hydraflow Express 2006 for the example calculations. A time of concentration of 10 minutes was used for all SCS runoff calculations because of the short flow time of roadway runoff to the stormwater management system. An example calculation of the time of concentration is included in the Drainage Report in **Appendix A**.

Based on conceptual calculations, the NWFWMD pre-post for the 25-yr 24-hr storm was the controlling storm for detention purposes. NWFWMD considers the SWMF surface as impervious area whereas Leon County calculation requirements consider dry retention SWMF's as pervious area. The NWFWMD detention volume was calculated for the example scenarios as detailed in the Drainage Report in **Appendix A**.

5.3. Innovative Solutions Considered

Irrigation

Irrigation with collected stormwater has been used in the Bannerman Road area for some projects, such as the Trinity Reformed Church property. This application cannot provide the

total treatment requirement for the roadway corridor due to the limitations of irrigation volume (1.5" per week according to the Bradfordville Study Area standards) and the lack of pervious surface area associated with a linear roadway project. However, this method was not totally eliminated from consideration and may be appropriately included as a supplemental feature for landscaped areas in the final design.

Bioretention (Using a Depressed Median)

Utilization of a depressed median for storage and infiltration is a stormwater BMP to provide treatment. Bioretention in the median is usually appropriate for wide median applications with well drained underlying soils to develop a sufficient depth to create significant storage volume and recovery. It was considered as an option for a roadway cross section with a 40' median. It would not be feasible for a 22' wide median due to the lack of depth available and the tendency for the infiltrated water to flow laterally due to the highly impermeable soils and could affect the road base. The selected three build alternatives chosen for Segment 3 utilized a 22' median to limit right of way acquisition; therefore bioretention in the median was eliminated from further consideration.

Offsite Grey Water Use

Collecting the stormwater and offering it as a grey water source was considered. Common uses of grey water include irrigation, wash water and cooling water. The stormwater from the proposed Segment 3 Alternative A would be uniquely suited to grey water use. The proposed concept is for the majority of the stormwater to be filtered through an engineered soil on the vegetated swale bottom before entering the stormwater system. This will significantly reduce, if not eliminate, suspended solids and other pollutants before the stormwater enters the subsurface storage chambers. The water then could be routed from the subsurface chambers to a grey water utility service.

Potential recipients of grey water included the plant nursery on Bannerman Road and Talquin Utilities. These parties may be unable to guarantee a long-term need for the collected stormwater as a grey water service. In addition, there is no existing grey water service utility in the area that could be connected to. Creating this was judged to not be feasible and this alternate method was eliminated from further consideration.

Infiltration Trench

Direct discharges into infiltration trenches were not considered viable for large volume requirements due to the probable sediment loading in the corridor. Clogging would be an issue because of the prevalence of fine grained soils, requiring frequent maintenance, and probably replacement within 5-10 years. To address and overcome this concern, runoff would be pre-treated on the surface reaching the subsurface storage area only through enhanced infiltration or surface discharge from a sediment control pond.

In this scenario, the subsurface storage would be an aggregate filled trench, fully wrapped in a geotextile fabric envelope, under a layer of engineered soil and possibly special sod

vegetation. As stormwater infiltrated from the swale, the engineered soil and the fabric layer would act as filters capturing fine grained soils, and thus prevent the aggregate storage layer from clogging. The engineered soil would be a select soil such as an SPSM or an A-3 soil to provide a controlled infiltration rate to the subsurface storage zone. Rehabilitation or replacement of the surface engineered soil and sod is less costly than aggregate and could be scarified or replaced as needed. Subsurface aggregate infiltration trenches were incorporated into the design for Alternative A in Segment 3. A modification of this design could be used for Alternatives B & C if required to reduce the size of the off-site SWMF's.

A modification of this system considered was to use a deep "sand chimney" trench rather than the relatively shallow storage zone in the hope that the trench would penetrate sand lenses. This option was explored to determine if these favorable soils were present. However the geotechnical survey did not encounter any lenses within any of the 25' borings, and the deep trench sand chimney was eliminated.

Subsurface Stormwater Chambers

Subsurface stormwater chambers were considered in conjunction with the above infiltration trench as a way to increase storage capacity within limited right of way areas. This concept was considered in the design of Alternative A of Segment 3. Subsurface stormwater chambers could potentially be added to the design of Alternatives B & C as an economic alternate to larger SWMF sizes or to meet recovery criteria.

Pervious Pavement

Stormwater treatment volume reductions are available within the BSA per the Leon County Land Development Codes Sec. 10-4.301.(5). However maintenance for pervious pavement is significantly more intensive than typical concrete pavement due to the potential for clogging. Periodic maintenance is usually performed by using a vacuum sweeper or pressure washing to restore the permeability, but typically only restores the upper 1-2 inches. This option is appropriate only when it would reduce the treatment requirement a sufficient amount to offset the increased maintenance requirement. Pervious pavement was initially considered for the trails and sidewalks. Based on the maintenance concerns, project grades and fine grained soils which reduced the applicability, it was ultimately eliminated from consideration.

A sample detail of the approved drainage configuration for the sidewalk and/or multi-use path is shown in **Figure 5.1**. This detail also depicts the gravel under drain and filter fabric necessary to comply with the drainage requirements.

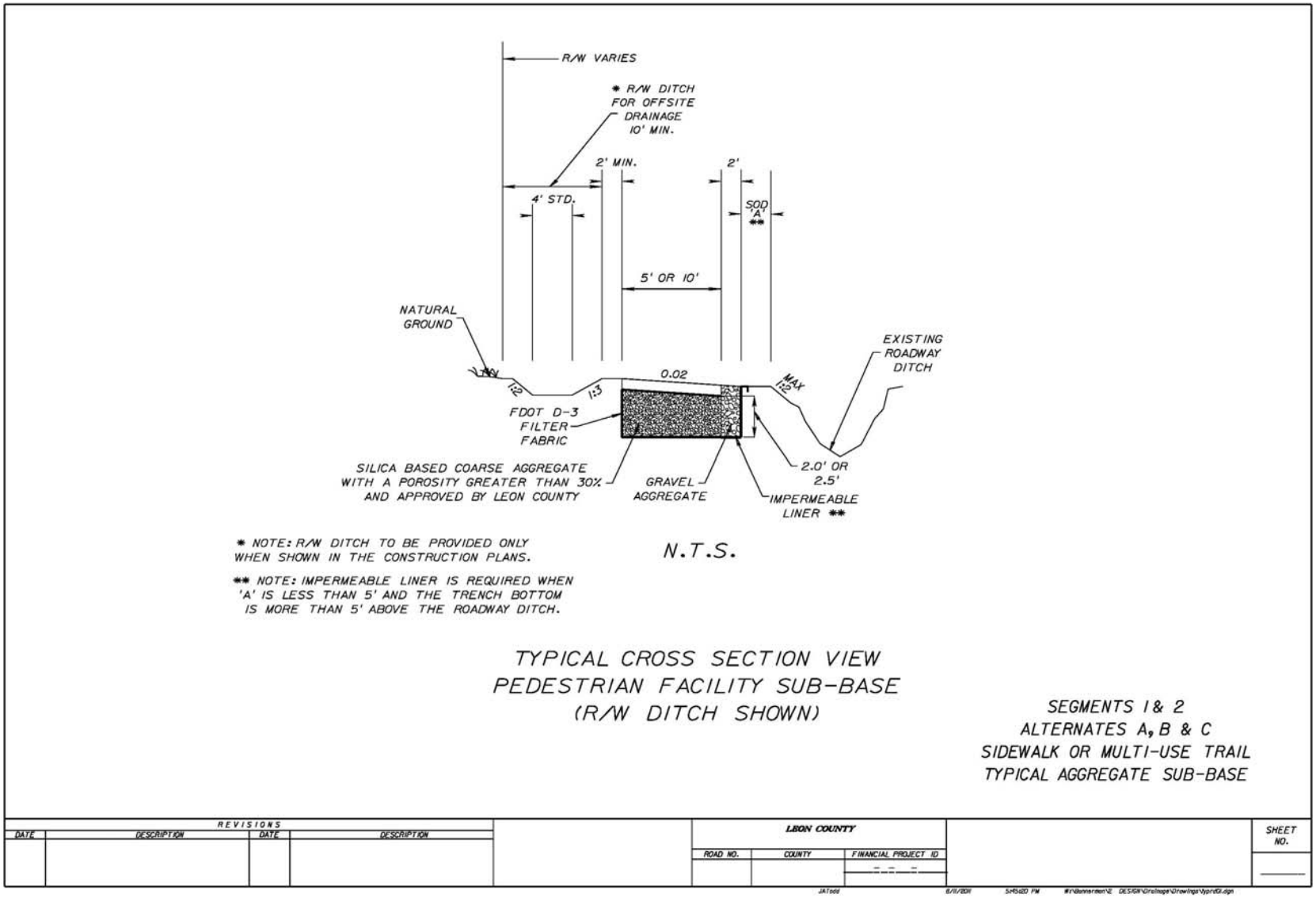
Large Regional SWMF/ Spray field

A large regional SWMF with or without a spray field was considered as an option for stormwater retention and recovery. Regional facilities are most effective when a large portion of the project could to drain to one centralized holding facility for infiltration and/or irrigation on a large tract of land. However, it would be very difficult and expensive to drain a majority of the project area to one location through a storm sewer system due to the significant vertical

relief in the topography along the corridor. Multiple basins draining to one location would likely require an inter-basin transfer design study to meet Leon County regulations in Sec. 10-4.303.(9). It would also require a much larger tract with suitable infiltration rates. This type of site was determined to be not readily available, and this option was eliminated from further consideration for multiple basin applications.

The Drainage Report can be viewed in its entirety in **Appendix** A.

Figure 5.1: Pavement Underdrain Detail



6.0 ALTERNATIVE CORRIDOR ANALYSIS

Within the Bannerman Road study area, existing right-of-way (R/W) ranges between 40 feet in width for the majority of the corridor from North Meridian Road (CR 155) to Tekesta Drive and 100 feet in width from Tekesta Drive to Thomasville Road. Although alternative corridors were considered, including the utility easement on the west end of the project, none were considered feasible nor were considered for the purposes of this study.

6.1. MULTIMODAL TRANSPORTATION SYSTEM CONSIDERATIONS

The primary mode of transportation in the study area is the private automobile. There are presently limited facilities providing service for pedestrians or bicyclists on Bannerman Road. In advance of the intersection with Thomasville Road, bicycle lanes and sidewalks are present for one-quarter mile along Bannerman Road. There are presently no other designated facilities for bicyclists or pedestrians along the rest of the study corridor.

There is currently no local bus service along the corridor. The closest bus line runs along Thomasville Road and terminates at a park-n-ride lot located in the Target parking lot east of the study corridor. The nearest airport is the Tallahassee Regional Airport. The current location is approximately 14 miles to the southwest of the project study area. Multimodal transportation systems are not a factor in the redesign of the roadway, with the exception of pedestrian and multiuse facilities.

6.2. DEVELOPMENT OF ALTERNATIVES

Multiple alternatives were considered for the Bannerman Road Corridor Study. For segments 1 and 2, there were a total of five (5) alternatives considered for each segment and presented to the public in addition to the "no-build" alternative. For Segment 3, three (3) alternatives were considered in addition to the no-build alternative. Each alternative is proposed along the existing alignment of Bannerman Road.

Table 6.1: CAC Poll - Roadway Features

	Segment		
Roadway Feature	1	2	3
2-Lane	2.3	1.1	
4-Lane	0.7	2.3	2.9
Grass Median	1.0	1.7	1.9
Center Turn-Lane	0.9	0.6	0.6
Amenities	1	2	3
Sidewalk 1-side	1.6	1.3	1.3
Sidewalk 2-sides	0.4	1.3	1.4
Bike Lanes	1.0	1.3	1.6
Multi-use Path	1.4	2.1	2.3
Curb & Gutter	1.1	2.3	2.4
Swales	1.4	1.0	1.0

Rank each box 0 to 3, 0 if you do not desire that feature, 3 if you highly desire that feature

The Citizen's Advisory Committee (CAC) guided the development of the alternatives. The CAC Members voted on the desired amenities that they felt were needed in each segment. A preliminary poll was taken at the October 17, 2010 CAC Meeting. Results of the poll are shown in **Table 6.1.** This table uses ratings on a scale from zero to

three, where three is very desirable and zero is not desirable.

6.3. NO BUILD ALTERNATIVE

The No Build alternative represents an option where improvements will not be made to the existing roadway. This alternative is important because it shows the effect of the projected traffic growth and the level of congestion that could occur should no improvements be made.

6.4. CORRIDOR ALTERNATIVES CONSIDERED

The selection of alternatives for detailed consideration was based on the CAC's stated objectives for this project. The objectives include increasing roadway capacity where necessary to accommodate existing and future traffic demand; minimizing the costs and environmental impacts; and accommodating bicycle and pedestrian traffic.

Extensive public involvement provided insight into what the CAC and project team determined is needed throughout the corridor. The majority of the CAC Members felt that Segment 1 should remain a two-lane roadway, and that Segments 2 and 3 should be four-laned. According to the Design Traffic results, only Segment 3 demand is anticipated to exceed the available capacity rendering the existing roadway configuration inadequate. By the April 6th, 2011 CAC meeting, the project team had narrowed down the most applicable alternatives to three (3) per segment. The general evaluation criteria used for the selection process consisted of public response, impacts, and need based upon future traffic demand. From this selection process, typical sections were developed for each alternative. Discussions with CAC members helped determine what features should be included in the roadway typical section. The typical section includes the roadway features that would typically be present along the roadway.

6.4.1. Alternative Typical Sections

The typical sections will be accommodated within the existing R/W of the corridor to the greatest extent possible. Widening along the existing alignment makes maximum use of the existing R/W, and will minimize impacts and costs.

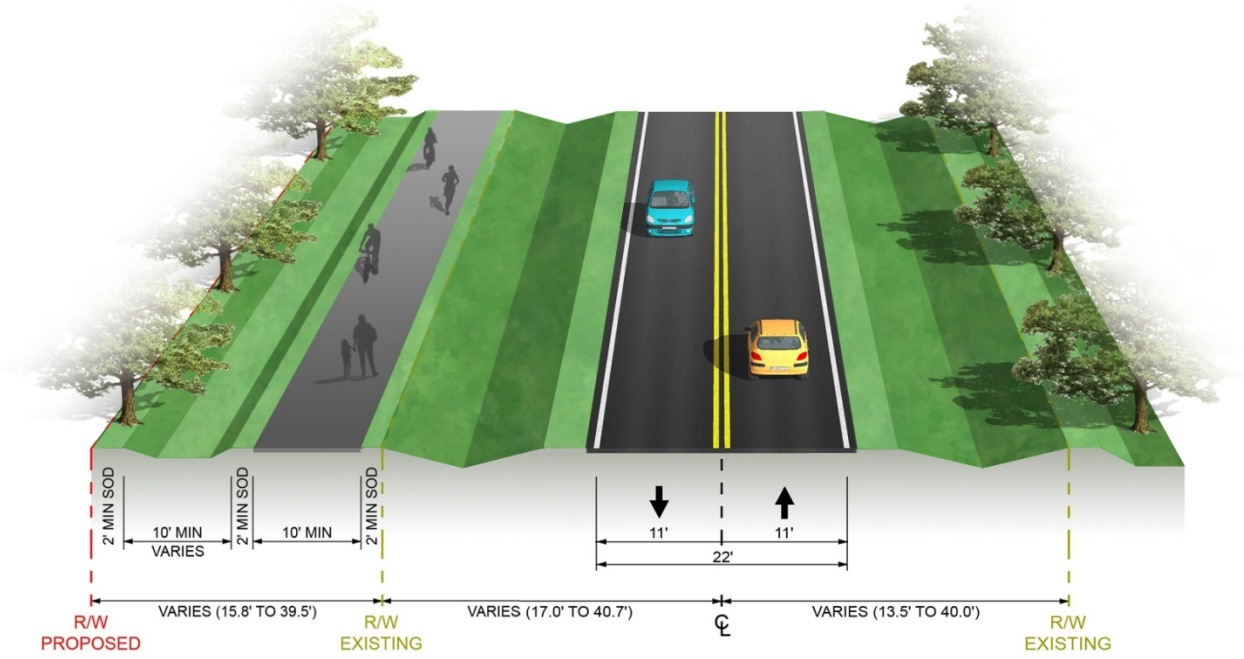
The traffic analysis results showed that Segments 1 and 2 did not need to be widened to four-lanes. The alternative analysis focuses on two-lane typical sections for Segments 1 and 2 between North Meridian Road and Tekesta Drive. Four-lane typical sections were considered for Segment 3 from Tekesta Drive to Thomasville Road.

Alternative A (Segments 1 and 2)

Alternative A (**Figure 6.1**) is a two-lane typical section that includes a multi-use path on one side of the roadway. This typical section widens the existing R/W to the north to accommodate the multi-use path on the north side of the roadway. The typical section includes the existing 11 foot wide travel lanes, the existing grass shoulders, and a 10 foot wide multi-use path on the north side of the roadway. The multi-use path will accommodate both pedestrians and bicyclists.

Drainage is provided by existing roadside swales that will convey runoff to existing outfall locations. The multi-use path is to be constructed of concrete or asphalt pavement. In addition, a gravel and sand layer will be placed adjacent to the multi-use path, extending approximately two feet below the path to aid in storage and filtration of runoff.

Figure 6.1: Segments 1 & 2 – Alternative A Typical Section

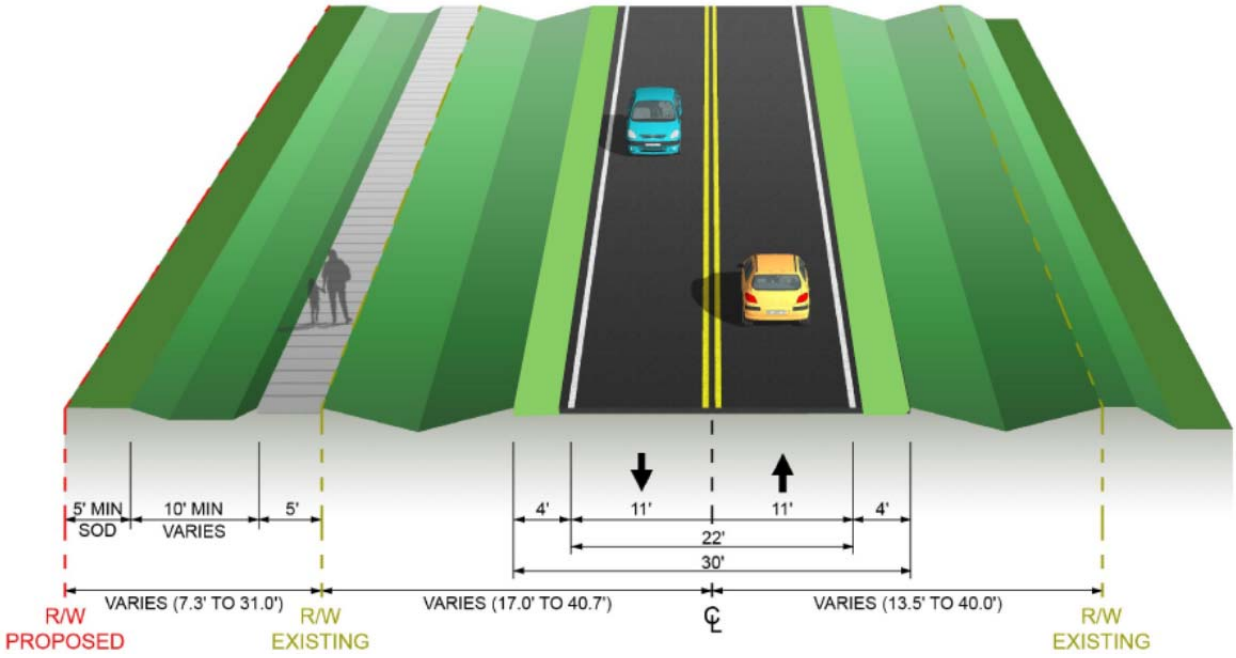


Alternative B (Segments 1 and 2)

Alternative B (**Figure 6.2**) is a two-lane typical section that includes a 5 foot sidewalk on one side of the roadway. This typical section widens the existing R/W to the north to accommodate the sidewalk on the north side of the roadway. The typical section includes the existing 11 foot wide travel lanes, the existing grass shoulders, and a 5 foot wide sidewalk.

The sidewalk is to be constructed of concrete or asphalt pavement. In addition, a gravel and sand layer will be placed adjacent to the sidewalk, extending approximately two feet below the sidewalk to aid in storage and filtration of runoff. Drainage is provided by the existing swales that will convey the runoff.

Figure 6.2: Segments 1 & 2 – Alternative B Typical Section

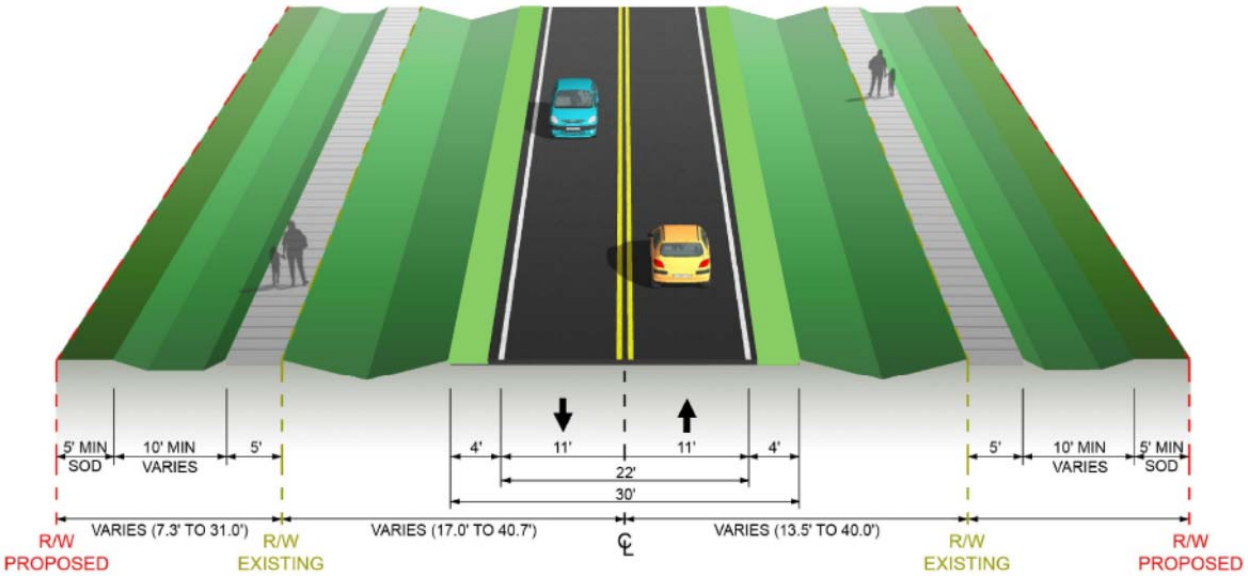


Alternative C (Segments 1 and 2)

Alternative C (**Figure 6.3**) is a two-lane typical section that includes a sidewalk on both sides of the roadway. This typical section widens the existing R/W to both sides of the roadway to accommodate the new sidewalks. The typical section includes the existing 11 foot wide travel lanes, existing grass graded shoulders, and 5 foot wide sidewalks.

Drainage is provided by the existing swales that will convey runoff. The sidewalk is to be constructed of concrete or asphalt pavement. In addition, a gravel and sand layer will be placed adjacent to the sidewalk, extending approximately two feet below the sidewalk to aid in storage and filtration of runoff.

Figure 6.3: Segments 1 & 2 – Alternative C Typical Section

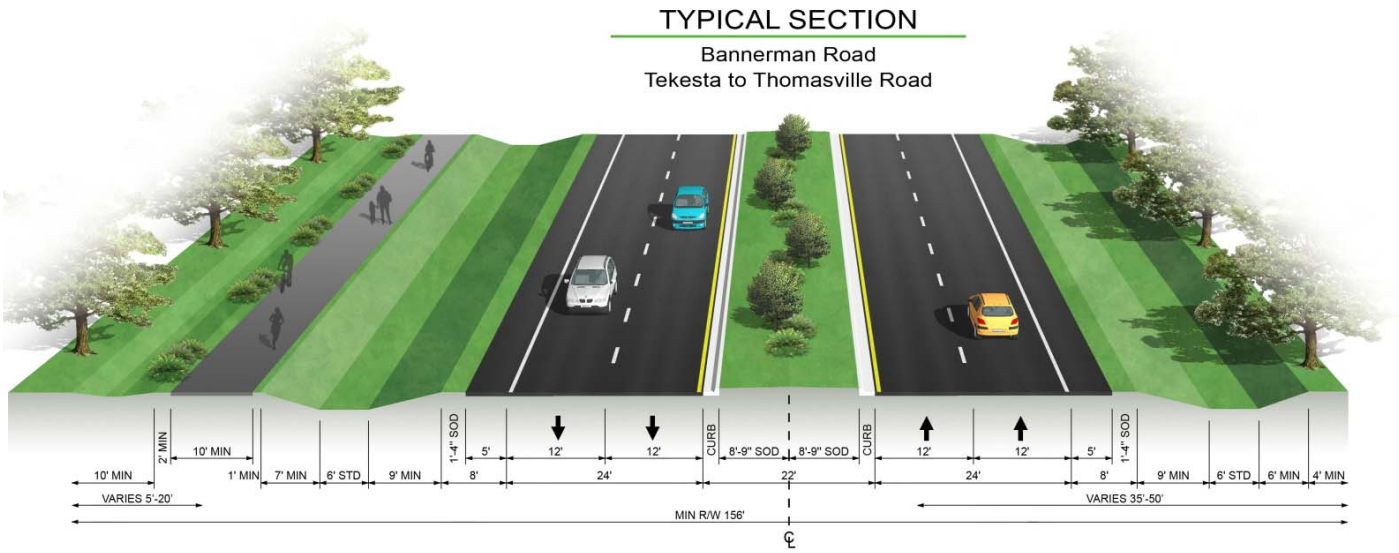


Alternative A (Segment 3)

Alternative A (**Figure 6.4**) in Segment 3 is a four-lane divided typical section that includes a multi-use path on one side of the roadway. This typical section widens the roadway to the south of the existing road. Due to strict stormwater treatment requirements throughout the corridor, the existing two-lane roadway must stay in the current location. Widening will occur north of the existing road, or to the south.

The typical section includes four 12 foot wide travel lanes, a 22 foot wide grassed median, and a ten foot multi-use path. Drainage is provided by grass swales. Stormwater treatment is provided through a gravel and sand filtration system within the swale. A vault system under the swale provides additional storage of stormwater.

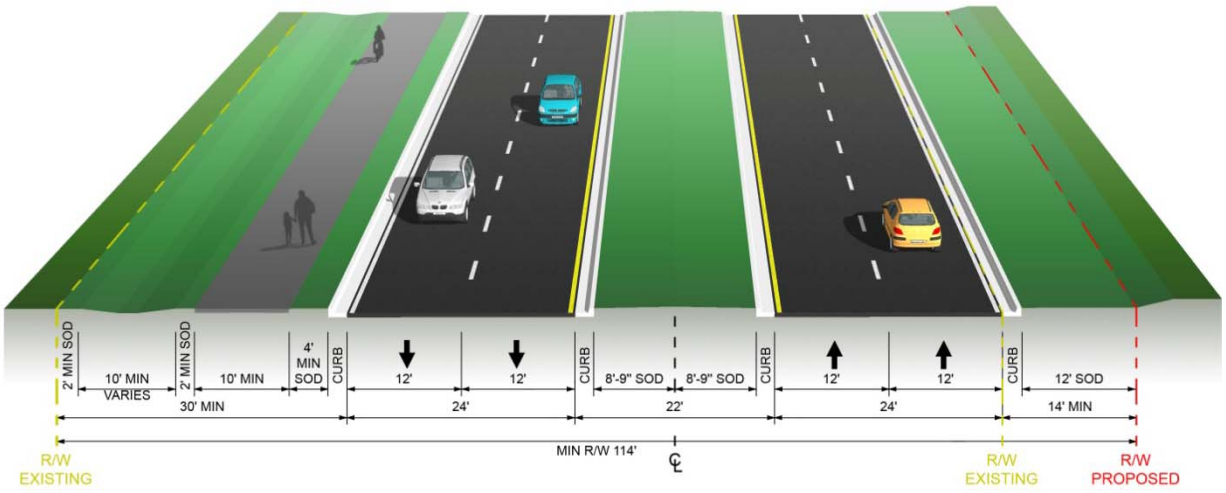
Figure 6.4: Segment 3 – Alternative A Typical Section



Alternative B (Segment 3)

Alternative B &C (**Figure 6.5**) in Segment 3 consists of a four-lane divided typical section that includes a multi-use path on one side of the roadway. The typical section widens the roadway to the south of the existing R/W. The typical section includes 12 foot wide travel lanes, a 22 foot wide grassed median, and a ten foot multi-use path. Drainage is provided by through a curb and gutter system. Stormwater is conveyed through the stormwater system and drains into proposed stormwater treatment ponds.

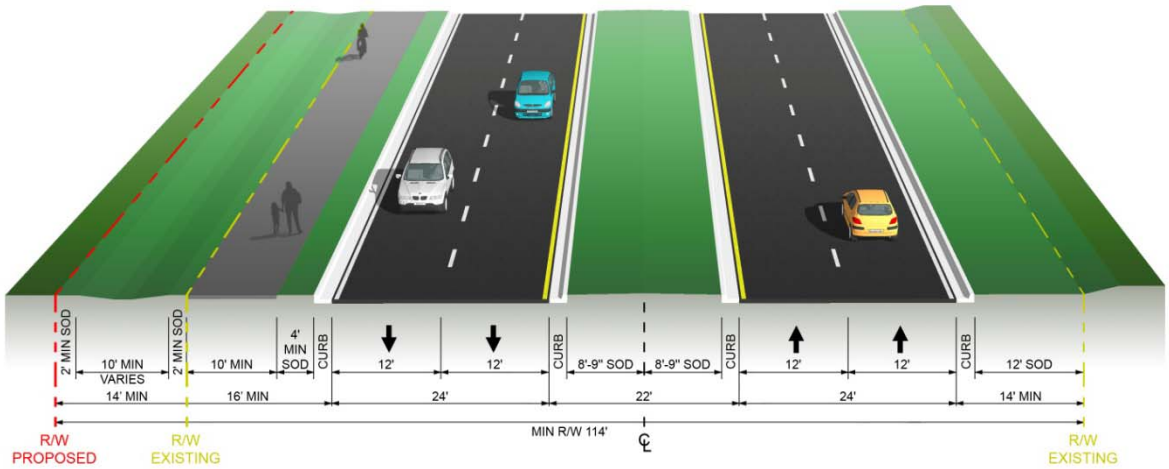
Figure 6.5: Segment 3 – Alternative B Typical Section



Alternative C (Segment 3)

Alternative C (**Figure 6.6**) in Segment 3 consists of a four-lane divided typical section that includes a multi-use path on one side of the roadway. Alternative C widens the roadway to the north of the existing roadway. The typical section includes 12 foot wide travel lanes, a 22 foot wide grassed median, and a ten foot multi-use path. Drainage is provided by through a curb and gutter system. Stormwater is conveyed through the stormwater system and drains into proposed stormwater treatment ponds.

Figure 6.6: Segment 3 – Alternative C Typical Section



6.4.2. Conceptual Drainage and Stormwater Management

Build alternatives were developed for each of the three segments based on existing and forecasted future traffic demand, public comment and stormwater requirements. A 'no-build' alternative is also a consideration for all three segments, but is not discussed further in this section.

Segments 1 & 2 have three build alternatives that propose to add sidewalks or a multi-use trail with no change to the existing roadway section.

- Alternative A proposes a 10' multi-use trail on the north side of the road to provide recreational pedestrian and bicycle accommodations.
- Alternative B proposes a 5' sidewalk on one side of the road for pedestrian use.
- Alternative C proposes a 5' sidewalk on both sides of the road for pedestrian use.

Minimal improvements to the roadway are required to implement any of the three alternatives; therefore, it is anticipated that additional flooding in these segments will not occur due to project improvements.

Segment 3 has three build alternatives that widen the segment to four lanes. A 10' multi-use trail is also included on the north side of the Segment. All build alternatives in Segment 3 expand the existing 11' lanes to 12' using either a rural section or urban section each with a 22' raised curbed median.

- Alternative A keeps the existing pavement in place as the west-bound lanes. The additional eastbound lanes will be placed to the south. This alternative proposes to add a 5' paved shoulder and 3' of grassed shoulder to each travel direction. A swale on the north side will be designed with sufficient storage to capture the required treatment volume. The swale will be designed for enhanced infiltration to create an underground storage zone for recovery. Excess runoff will be piped across the roadway and discharged into the south roadway swale for conveyance to the outfall. Alternative A has a proposed minimum standard right of way width of 156 feet. SWMF sites are not anticipated except within one basin in Segment 3.

- Alternative B also utilizes the existing roadway as the west-bound lanes, providing curb and gutter for both travel directions. This alternative would utilize a traditional storm sewer system and offsite SWMF's to meet retention and detention requirements. Alternative B requires a minimum of 114 feet of proposed right of way corridor, in addition to the estimated SWMF sites.

- Alternative C has the same typical section as Alternative B, but it utilizes the existing roadway as the east-bound lanes. The new lanes and multi-use trail would be constructed on the north side towards Killearn Lakes and the utility corridor. Alternative C also requires a minimum 114 feet of proposed right of way corridor in addition to the estimated SWMF sites.

All of the above alternatives require significant storage to address the Lake Jackson or Bradfordville Study Area (BSA) retention requirements and all stormwater criteria.

6.5. EVALUATION OF ALTERNATIVES

The evaluation matrix comparing the three (3) build alternatives for each Segment is included in **Table 6.3** through **Table 6.5**. The matrices examine factors that show a measurable difference between the alternatives receiving detailed evaluation. Factors that are considered in the evaluation matrix include social and cultural impacts, environmental impacts, and estimated costs.

6.5.1. Social and Cultural Impacts

Impacts to existing parcels along the corridor were determined based on the footprint of the Alternative typical section Impacts were determined using geographic information system (GIS) analysis to calculate the number of impacted parcels and the acreage of impact each parcel experienced. Parcels were categorized to better understand the right-of-way impacts. Categories include:

- *Residential* – parcels currently zoned as "residential" and have a permanent residential structure on the property
- *Neighborhood* – parcels that belong to a group of home owners, such as a home owners association
- *Business* – parcels currently zoned "business" and have a permanent business located on the parcel
- *Undeveloped* – parcels that do not have permanent structures, regardless of zoning
- *Municipal* – parcels that are owned by a city, county or state. The fire station is an example of a "municipal" parcel
- *Stormwater* – parcels that would be required to provide stormwater treatment. The stormwater facilities were not identified, but the approximate acreage needed was accounted for in this category

The CAC felt that providing bicycle and pedestrian facilities would enhance the social and cultural environment of the corridor. The matrix includes a section that catalogues whether bicycle, pedestrian or "both" are accommodated for each of the proposed alternatives. Maintenance of traffic was also identified and quantified ranging from nominal ($) to extensive ($$$).

6.5.2. Environmental Impacts

Wetlands impacts were calculated based on field observations of wetlands along the corridor. The acres of wetlands impacted were calculated from GIS analysis for each alternative footprint.

Floodplain impacts were based on GIS analysis. Threatened and Endangered Species impacts were ranked "Low", "Moderate", and "High", based on the likelihood that the build alternatives would impact these resources.

Potential contaminated sites include developed parcels that may be considered to be contaminated. The Bannerman Road corridor includes three potential contamination sites; the Fire Station just west of Bull Headley Road (2 parcels) and the gas station at Bull Headley Road and Bannerman Road.

Noise Impacts were rated "Low", "Moderate", or "High", based on the likelihood that noise due to future traffic volumes would impact noise sensitive areas. A preliminary noise analysis was completed on Segment 3 as this has the highest potential for noise impact.

Unavoidable wetland impacts are anticipated for each of the build alternatives in each of the segments. **Table 6.2** shows estimated wetland impacts in acres for each alternative.

Table 6.2: Wetland Impacts (in Acres)

Segment	Alternative A	Alternative B	Alternative C
Segment 1 Meridian to Bull Headley	0.2	0.2	0.4
Segment 2 Bull Headley to Tekesta	0.2	0.2	0.3
Segment 3 Tekesta to Thomasville	0.3	0.3	0.3

6.5.3. Estimated Costs

Cost estimates were completed for construction, final design, construction engineering & inspection, and preliminary right-of-way costs. The cost estimates in **Table 6.3** through **Table 6.5** are for comparison purposes between alternatives and not for budget preparation. The total estimated project costs are rounded to the $100,000. The cost estimate for the preferred alternative have been updated in **Section 6.6** of this report for budgeting purposes.

Construction costs were determined based on each Alternative's typical section and the length of each Segment. As previously discussed, the typical section contains roadway features that are typically found throughout the roadway, therefore an engineer's estimate of construction costs can be determined using this information. Average costs published on the FDOT website from July 2010 through December 2010 were used for this estimate.

Construction costs for Segment 3 were calculated using a combination of methods. The FDOT Long Range Estimating (LRE) tool was used for the roadway components such as grading, asphalt, signing, and marking. Due to the complexity of the drainage component, drainage costs were calculated based on a preliminary design, estimating the quantity of materials for each Alternative.

Segments 1 and 2 used the quantity per typical section method based on the typical roadway section and the length of those Segments. The evaluation matrices for each of the Alternatives follow in **Table 6.3** through **Table 6.5**.

Table 6.3: Segment 1 Alternatives Evaluation Matrix

Segment 1	Alternative A	Alternative B	Alternative C
Meridian to Bull Headley	Multi-use Path, Swales	Sidewalk 1-Side, Swales	Sidewalk both-sides, Swales
Social / Cultural Impacts			
Residential Impacts (parcels)	41	40	74
Residential Impacts (acres)	4.24	2.92	6.00
Residential Relocations (number)	0	0	0
Neighborhood Impacts (parcels)	0	0	0
Neighborhood Impacts (acres)	0.00	0.00	0.00
Business Impacts (parcels)	1	1	2
Business Impacts (acres)	0.17	0.13	0.47
Business Relocations (number)	0	0	0
Undeveloped Parcels (number)	8	8	14
Undeveloped Impacts (acres)	1.06	0.76	1.79
Municipal Parcels (number)	0	0	2
Municipal Parcels (acres)	0.00	0.00	0.20
Stormwater Pond Impacts (parcels)	0	0	0
Stormwater Pond Impacts (acres)	0.00	0.00	0.00
Total ROW (acres)	5.47	3.81	8.46
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH	PED	PED
Maintenance of Traffic ($, $$, $$$)	$	$	$
Environmental Impacts			
Wetlands Impacts (acres)	0.2	0.2	0.4
Floodplains (acres)	0.0	0.0	0.0
Threatened and Endangered Species (high, medium, low)	Low	Low	Low
Potential Contaminated Sites (number)	0	0	2
Noise Impacts (low, moderate, high)	Low	Low	Low
Estimated Costs			
Construction Cost (dollars)	$ 1,455,174.00	$ 997,256.00	$ 2,088,282.00
Final Design and CEI (dollars)	$ 291,034.80	$ 199,451.20	$ 417,656.40
ROW Cost (dollars)	$ 4,236,400.00	$ 4,072,000.00	$ 7,824,000.00
Total Cost $$[1, 2, 3]	**$ 6,000,000.00**	**$ 5,300,000.00**	**$ 10,300,000.00**

1. All associated costs reflect 2011 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates at this time are for comparison purposes between alternatives and not for budget preparation. The cost estimates will be updated and fine-tuned in the Final Engineering Report.

Table 6.4: Segment 2 Alternatives Evaluation Matrix

Segment 2	Alternative A	Alternative B	Alternative C
Bull Headley to Tekesta	Multi-use Path, Swales	Sidewalk 1-Side, Swales	Sidewalk both-sides, Swales
Social / Cultural Impacts			
Residential Impacts (parcels)	0	0	9
Residential Impacts (acres)	0.00	0.00	3.06
Residential Relocations (number)	0	0	0
Neighborhood Impacts (parcels)	6	5	7
Neighborhood Impacts (Acres)	1.94	1.20	1.32
Business Impacts (parcels)	6	4	5
Business Impacts (Acres)	0.44	0.30	0.37
Business Relocations (number)	0	0	0
Undeveloped Parcels (number)	3	3	4
Undeveloped Impacts (acres)	0.59	0.43	0.50
Municipal Parcels (number)	0	0	0
Municipal Parcels (acres)	0.00	0.00	0.00
Stormwater Pond Impacts (parcels)	0	0	0
Stormwater Pond Impacts (acres)	0.00	0.00	0.00
Total ROW (acres)	2.98	1.93	2.20
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH	PED	PED
Maintenance of Traffic ($, $$, $$$)	$	$	$
Environmental Impacts			
Wetlands Impacts (acres)	0.2	0.2	0.3
Floodplains (acres)	0.0	0.0	0.0
Threatened and Endangered Species	Low	Low	Low
Potential Contaminated Sites (number)	1	1	1
Noise Impacts (low, moderate, high)	Low	Low	Low
Estimated Costs			
Construction Cost (dollars)	$ 955,101.00	$ 635,665.00	$ 1,142,246.00
Final Design and CEI (dollars)	$ 286,530.30	$ 190,699.50	$ 342,673.80
ROW Cost (dollars)	$ 1,636,900.00	$ 1,244,300.00	$ 2,324,500.00
Total Cost $$[1, 2, 3]	**$ 2,900,000.00**	**$ 2,100,000.00**	**$ 3,800,000.00**

1. All associated costs reflect 2011 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates at this time are for comparison purposes between alternatives and not for budget preparation. The cost estimates will be updated and fine-tuned in the Final Engineering Report.

Table 6.5: Segment 3 Alternatives Evaluation Matrix

Segment 3	Alternative A	Alternative B	Alternative C
Tekesta to Thomasville	Swales, Widen South	Curb and Gutter, Widen South	Curb & Gutter, Widen North
Social / Cultural Impacts			
Residential Impacts (parcels)	14	20	20
Residential Impacts (acres)	5.42	3.22	0.44
Residential Relocations (number)	0	0	0
Neighborhood Parcels (number)	4	3	4
Neighborhood Impacts (acres)	3.41	0.60	6.71
Business Impacts (parcels)	3	3	4
Business Impacts (acres)	1.83	1.21	0.42
Business Relocations (number)	4	0	0
Undeveloped Parcels (number)	3	3	0
Undeveloped Impacts (acres)	1.10	0.62	0.00
Municipal Parcels (number)	0	0	0
Municipal Parcels (acres)	0.00	0.00	0.00
Stormwater Pond Impacts (parcels)	0	7	7
Stormwater Pond Impacts (acres)	0.00	1.75	1.75
Total ROW (acres)	11.76	7.40	9.32
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH	BOTH	BOTH
Maintenance of Traffic ($, $$, $$$)	$	$	$
Environmental Impacts			
Wetlands Impacts (acres)	0.3	0.3	0.3
Floodplains (acres)	0.0	0.0	0.0
Threatened and Endangered Species	Low	Low	Low
Potential Contaminated Sites (number)	0	0	0
Noise Impacts (low, moderate, high)	Low	Low	Moderate
Estimated Costs			
Construction Cost (dollars)	$ 5,160,199.00	$ 11,050,692.00	$ 11,050,692.00
Final Design and CEI (dollars)	$ 1,806,069.65	$ 3,867,742.20	$ 3,867,742.20
ROW Cost (dollars)	$ 2,639,600.00	$ 2,802,800.00	$ 2,954,600.00
Total Cost $$[1, 2, 3]	**$ 9,600,000.00**	**$ 17,700,000.00**	**$ 17,900,000.00**

1. All associated costs reflect 2011 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates at this time are for comparison purposes between alternatives and not for budget preparation. The cost estimates will be updated and fine-tuned in the Final Engineering Report.

6.6. PREFERRED ALTERNATIVES

The selection of preferred alternatives for detailed consideration was based on the stated objectives for this project and from input received at the public meetings. The primary objectives are to increase the traffic capacity to accommodate existing and future volumes, to accommodate pedestrian and bicyclists, and to minimize costs and environmental impacts.

The CAC voted to determine the preferred alternative by ranking each alternative in each Segment. Voting occurred at the June 6, 2011 CAC meeting. The CAC members were asked to rank each Alternative from 1 to 4, 1 being the most preferred and 4 being the least preferred. The Leon County P2 Policy states that the CAC must have a majority for a vote to count.

The CAC then presented the Preferred Alternative to the Board of County Commissioners as an Agenda Item at the October 11, 2011 Board Meeting. The Board voted 7-0 in favor of the Preferred Alternative.

6.6.1. Segment 1 – Preferred Alternative

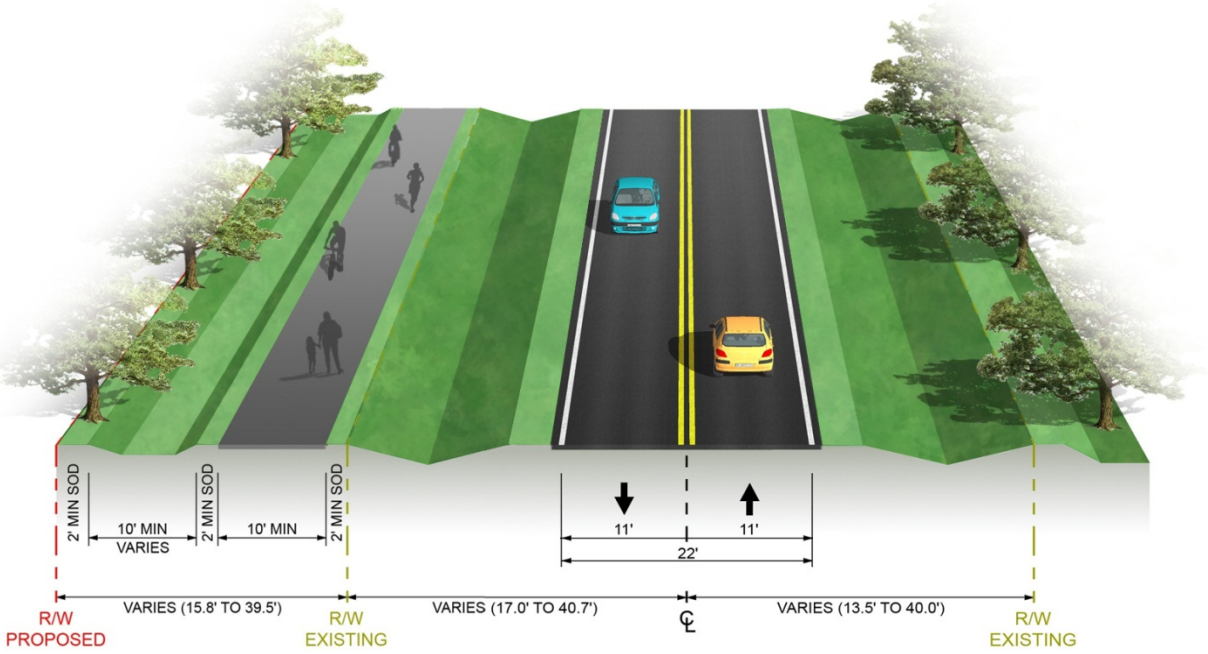
The CAC voted for Alternative A for Segment 1. Alternative A consists of a multi-use path on the north side of the existing two-lane roadway. The votes for Segment 1 are shown in **Table 6.6**. The Preferred typical section is shown in **Figure 6.7.**

Table 6.6: Segment 1 CAC Voting

Segment 1							
CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	2	1	1	*1	3	1	3
Alt. B	1	2	2	3	2	2	2
Alt. C	3	3	3	4	4	3	4
No-Build	4	4	4	2	1	4	1

*Initial vote was for No-Build

Figure 6.7: Segment 1 Preferred Alternative Typical Section



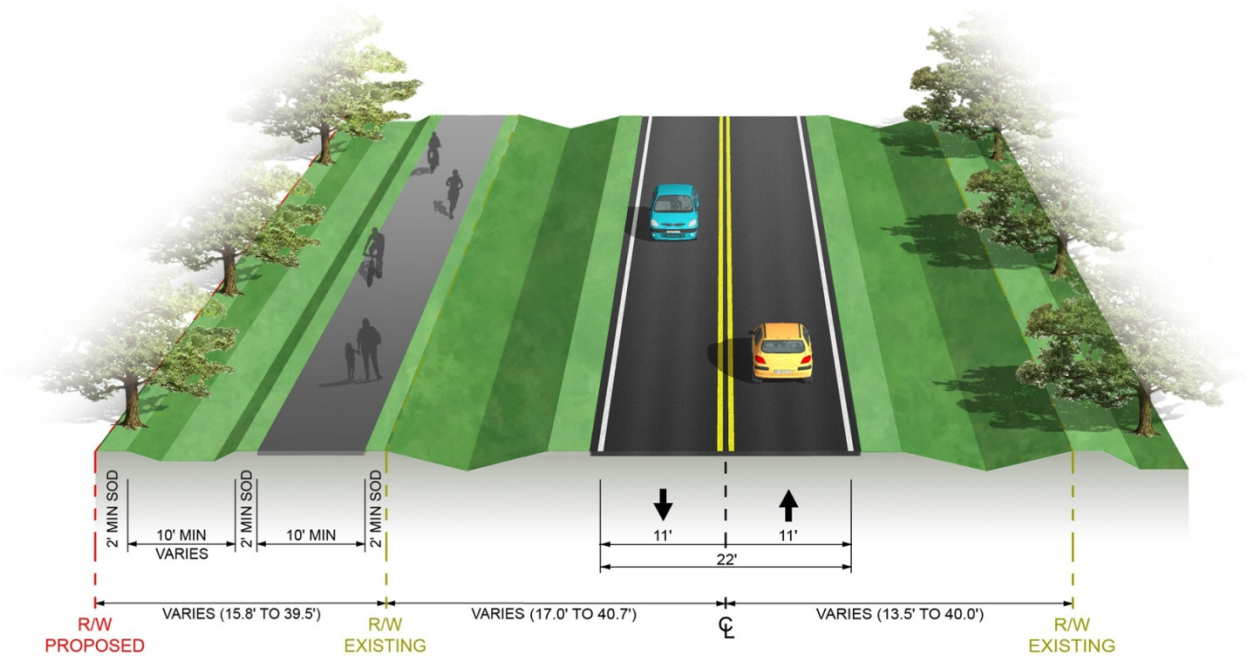
6.6.2. Segment 2 – Preferred Alternative

The CAC voted for Alternative A in Segment 2. Alternative A consists of a multi-use path on the north side of the existing two-lane roadway. Below in **Table 6.7** the CAC vote tallies are shown for Segment 2. **Figure 6.8** depicts the typical section for the CAC Preferred Alternative in Segment 2.

Table 6.7: Segment 2 CAC Voting

Segment 2							
CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	1	1	1	1	2	1	1
Alt. B	2	2	2	3	1	2	3
Alt. C	3	3	3	4	4	3	4
No-Build	4	4	4	2	3	4	2

Figure 6.8: Segment 2 Preferred Alternative Typical Section


2' MIN SOD
10' MIN
VARIES
2' MIN SOD
10' MIN
2' MIN SOD
11'
11'
22'
VARIES (15.8' TO 39.5')
VARIES (17.0' TO 40.7')
VARIES (13.5' TO 40.0')
R/W
PROPOSED
R/W
EXISTING
R/W
EXISTING

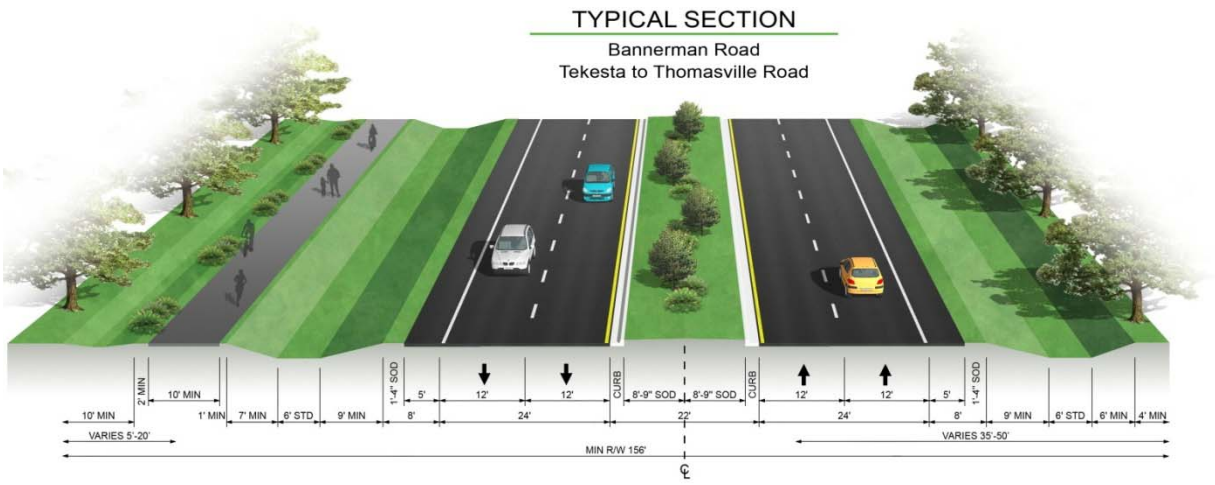
6.6.3. Segment 3 – CAC Preferred Alternative

The CAC voted for Alternative A in Segment 3. Alternative A consists of utilizing the existing roadway as the westbound lanes and widening to the south with the eastbound lanes. Swale drainage is used for stormwater treatment and conveyance and a multi-use path is proposed on the north side of the roadway. Below in **Table 6.8** the CAC vote tallies are shown for Segment 3. **Figure 6.9** depicts the typical section for the CAC Preferred Alternative in Segment 3.

Table 6.8: Segment 3 CAC Voting

Segment 3							
CAC Member	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	Ms. Heggins
Alt. A	2	2	1	1	1	1	1
Alt. B	1	3	2	3	3	2	2
Alt. C	3	4	3	4	4	3	3
No-Build	4	1	4	2	2	4	4

Figure 6.9: Segment 3 Preferred Alternative Typical Section



6.6.4. Noise Analysis on Preferred Alternative

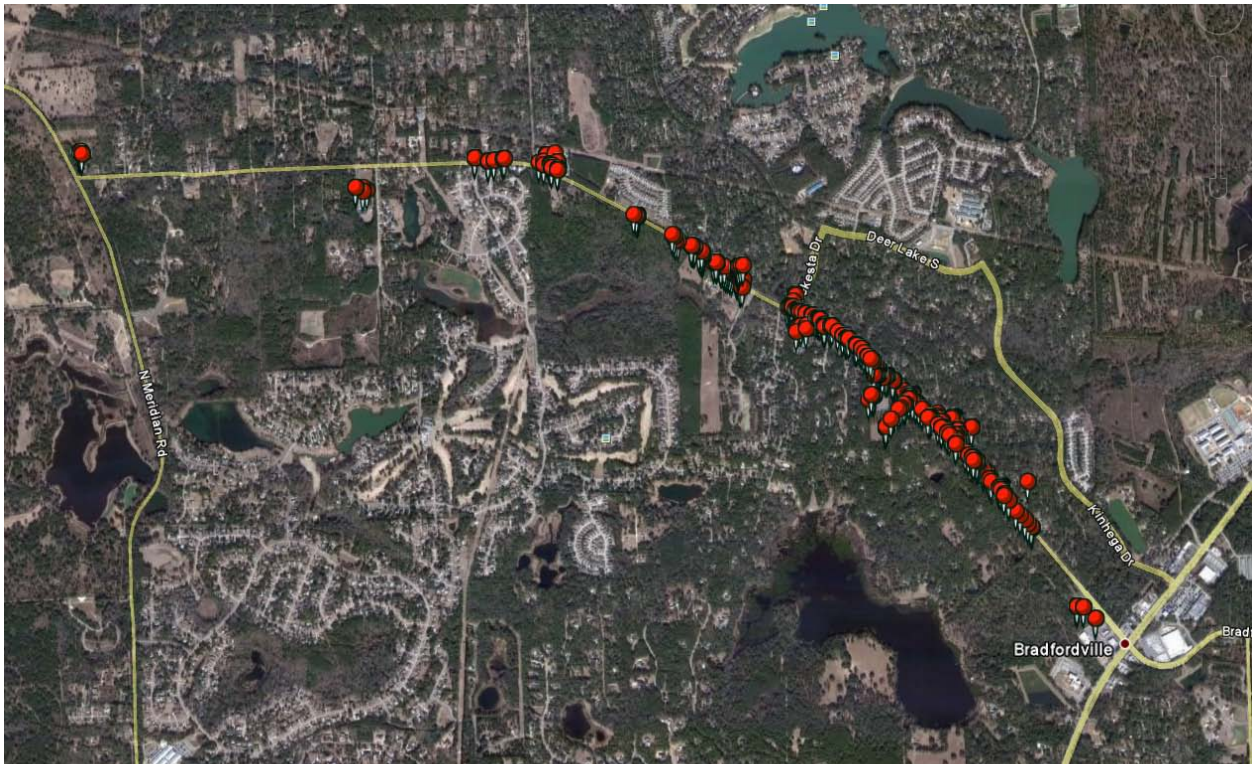
As part of the Bannerman Road Corridor Study, a noise study was conducted in accordance with the FDOT's Project Development and Environment Manual, Chapter 17, "Noise" and with Title 23 CFR (Code of Federal Regulations) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. Based on the Preferred Built Alternative for Bannerman Road, only Segment 3 (Tekesta Drive to Thomasville Road) involves widening to a four-lane facility. Therefore, this noise study was

conducted for Segment 3 only. Noise-sensitive receptors that were detected in the field evaluation are shown in **Figure 6.10**.

For this project, the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM) Version 2.5 (April 2004) was used to predict traffic noise levels at representative noise sensitive receiver sites. This model estimates the acoustic intensity at a noise sensitive receiver generated by a series of roadway segments (the source). Model-predicted noise levels are influenced by several factors, such as vehicle speed and distribution of vehicle types. Noise levels are also affected by characteristics of the source-to-receiver path, including the effects of intervening barriers, structures (houses, trees, etc.), ground surface type (hard or soft), and topography.

Noise levels documented in this memorandum represent the hourly equivalent sound level (LAeq1h). LAeq1h is the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a one-hour period. LAeq1h is measured in A-weighted decibels (dBA), which closely approximate the human frequency response.

Figure 6.10: Noise Receptors



Noise Sensitive Receivers

The FHWA has developed noise abatement criteria (NAC) to determine the levels of traffic noise impact on human activity. Five land use activity categories have been

identified for use in noise impact analysis. The NAC levels for these categories are presented in **Table 6.9** and apply only to areas of frequent human use where lowered noise levels are desirable.

Table 6.9: Hourly A-Weighted Noise Abatement Criteria Levels--Decibels (dBA)

Activity Category	Abatement Level (in L_{Aeq1h})		Description of Activity Category
	FHWA	FDOT	
A	57	56 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	66 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	72	71 (Exterior)	Developed lands, properties, or activities not included in Category A or B above.
D	--	--	Undeveloped lands.
E	52	51 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches. libraries, hospitals, and auditoriums.

Source: *PD&E Manual*, Chapter 17, Noise

A survey of the project corridor was conducted to identify the noise sensitive receivers that may be impacted by traffic noise associated with the proposed improvements. Noise sensitive receivers represent any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. Typical noise sensitive receivers include residences, parks, schools, hospitals, and churches.

The Bannerman Road (Segment 3) study area includes a number of noise sensitive sites including single family residences, churches and a community center (the Historic Bradfordville Schoolhouse). To facilitate the analysis of traffic noise impacts in these areas, a total of 73 noise receivers (57 receivers located north of Bannerman Road, and 16 located south) were identified and modeled based on noise sensitivity and roadway proximity.

All 73 representative noise receiver sites are classified under Activity Category B of the FHWA's NAC. For Activity Category B, noise abatement measures must be considered when predicted noise levels approach or exceed the 67 dBA NAC or when a substantial noise increase (i.e., 15 dBA) occurs.

Field Measurement of Noise Levels and Model Validation

Noise measurements were taken at representative sites along the project corridor. Noise monitoring was conducted on March 16 and March 17, 2011. The purpose of the monitoring was to document existing noise sources, determine if computer-predicted noise levels are representative of actual existing levels along Bannerman Road, and to validate the noise model for predicting existing and future noise levels. Noise measurements were recorded at five sites along Bannerman Road in Segment 3. The noise level monitoring was completed using Larson-Davis Model 870 sound-level analyzers, in accordance with the methodology established by the FHWA and documented in Report No. DP-96-046, Measurement of Highway-Related Noise: Final Report, May 1996. The A-weighted frequency scale was used and the sound meter was calibrated to 114 dBA (A-weighted decibels) using a Larson-Davis Model CA250 sound-level calibrator. At each site, monitoring was conducted for two or three ten-minute intervals with the microphone approximately five feet above the land surface.

Community noises and traffic information, such as the number of passenger cars and trucks and average speeds, were also collected at the time of noise monitoring. A K15-K Doppler Radar Gun was used to obtain average operating speeds for cars, medium trucks, and heavy trucks. Since all noise levels in this report are based on a one-hour period, the field-recorded traffic volumes were adjusted upward to reflect hourly volumes. The collected data was then used as input to TNM. Traffic noise was the dominant noise source in this area.

To validate the computer noise model, the TNM-predicted noise levels were compared to measured noise levels. When measured noise levels are within +/- 3.0 dBA of the computer predicted levels, the model is considered validated. At each of the five monitoring sites, the monitored noise levels were within +/- 3.0 dBA of the TNM predicted levels. The validated measured noise levels were 1.9 dBA higher to 2.7 dBA lower than those predicted by TNM. Because the TNM-predicted noise levels were within +/- 3.0 dBA of the measured noise levels, the model has been verified and is acceptable for predicting existing and future traffic noise levels along Bannerman Road.

Predicted Noise Levels

TNM was used to predict traffic noise levels at the 73 noise sensitive sites located along the project corridor that are potentially affected by traffic noise associated with the project. Traffic noise levels for the Existing Conditions/No-Build Alternative and preferred Build Alternative were predicted at the edge of the dwelling units and at areas of recreational use closest to the travel lanes

Traffic Data

The traffic data used in the prediction of noise levels for Existing Conditions/No-Build Alternative and Preferred Build Alternative consisted of the least of either: 1) the traffic capacity of the roadway at LOS “C”, or 2) the projected peak hour traffic demand of the

roadway. These traffic volumes can be expected to produce the noisiest traffic conditions likely to occur during the design year. For the Existing Conditions/No-Build Alternative, LOS "C" volumes were used to predict worst-case conditions, while peak hour traffic demand volumes were used for the Preferred Build Alternative analysis.

Predicted Traffic Noise Levels

Traffic noise levels at the 73 representative noise sensitive receivers for the Existing Conditions/No-Build Alternative and the four-lane Preferred Build Alternative were predicted using TNM. The predicted noise levels for the Existing Conditions/No-Build Alternative range from 47.6 dBA to 61.1 dBA. None of the predicted noise levels approach or exceed the FHWA's NAC of 67 dBA.

For the Preferred Build Alternative, design year noise levels are predicted to range from 51.5 dBA to 64.4 dBA. None of the predicted noise levels approach or exceed the FHWA's NAC of 67 dBA. The highest predicted traffic noise level, 64.4 dBA, is predicted to occur at receiver sites N1 and N46. Receiver sites N1 and N46 both represent single family residences located northeast of Bannerman Road within 100 feet of the proposed travel lanes.

A sampling of the 73 noise receiver sites, along with their TNM-predicted noise levels, is shown in**Table 6.10**. The noise receivers on both sides of Bannerman Road in closest proximity to the proposed travel lanes (i.e., Receivers N46 and S9) were included in **Table 6.10** to reveal the highest predicted noise levels on both sides of Bannerman Road.

Table 6.10: Predicted Noise Levels

Receiver Name	Receiver Location (Address)	Distance to Nearest Travel Lane in Feet (Existing/ Proposed)	TNM-Predicted Noise Levels (dBA)		
			Existing/No Build Noise Level	Preferred Build Alternative Noise Level	Increase in Noise Level with Project
N20	7100 Summit Ridge Drive	101/101	58.9	62.1	3.2
N38	3423 Treaty Oak Trail	140/140	57.2	60.8	3.6
N46*	3523 Cherokee Ridge Trail	85/85	61.1	64.4	3.2
S3	7914 McClure Drive	152/106	56.1	61.3	5.2
S9**	7066 Standing Pines Lane	151/105	56.0	62.5	6.5

* Receiver N46 is the closest receiver (on the northeast side) to the proposed travel lanes (i.e., 85 feet).
** Receiver S9 is the closest receiver (on the southwest side) to the proposed travel lanes (i.e., 105 feet).

Noise Abatement Measures

When traffic noise associated with a proposed project is predicted to approach or exceed FHWA's NAC, noise abatement must be considered. For the Preferred Build Alternative, no noise sensitive receiver sites are predicted to approach or exceed the FHWA's NAC. Therefore, the feasibility of noise abatement measures was not warranted or considered necessary for this project.

Construction Noise and Vibration

During construction of the project, there is the potential for noise impacts to be substantially greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project area does include residential areas that may be affected by noise and vibration associated with construction activities. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction.

Coordination with Local Agencies

Coordination with local agencies and officials has been accomplished during the development of this project. In addition, local and community officials have had the opportunity to comment on the proposed project at the public meetings. To aid local agencies in promoting land use compatibility, a generalized future noise impact contour distance has been developed for the properties in the immediate vicinity of the project. This contour distance represents the approximate distance from the edge of the nearest travel lane of Bannerman Road to the limits of the area predicted to approach or exceed the FHWA's NAC of 67 dBA in the design year 2035. The distance to the 66-dBA contour line is approximately 70 feet based on the Preferred Build Alternative. This contour distance does not include or assume any traffic noise shielding effects of vegetation or other obstructions such as buildings. To minimize the potential for land use incompatibility, noise sensitive land uses (e.g., residential) should be located beyond this distance.

The complete Noise Study Memorandum can be found in **Appendix D.**

6.6.5. Access Management Concepts for Segment 3

A median divided roadway provides challenges to access adjacent properties as not all side streets and residential driveways will maintain their current access configuration.

An access management plan was developed to balance the access needs and the mobility of roadway users.

The median openings for Segment 3 of the Bannerman Road Corridor Study were designed based on generally accepted access management principles. The Florida Department of Transportation (FDOT) has guidelines for access management published in Florida Administrative Code Chapter 14-97. Although Bannerman Road is not a state maintained roadway, it has characteristics similar to roadways with FDOT Access Class 5. Access Class 5 allows for full median opens every 1,320 feet and directional median openings every 660 feet. Driveway connection spacing should be limited to not less than 245 feet for roadways that have a speed limit of 45 mph or less.

Using the Institute of Transportation Engineer's (ITE) Trip Generation methods, the number of daily trips was estimated for each cross street along Segment 3 of Bannerman Road. The non-signalized intersections from Thomasville Road to Reynolds Drive were then prioritized based on the number of trips generated for each respective cross street. The intersections with higher priority were provided with higher access and a less restrictive median opening. In other words, the more vehicles that use each intersection, the higher the access allowed from the median.

Table 6.11 shows each side street along Bannerman Road from Thomasville Road to Reynolds Drive. The prioritization of the intersection based on the ITE Trip Generation is shown in the first column. The location of the cross street is depicted with the roadway station identification. Stations are laid out along the roadway center line from west to east in increments of feet. A station with the identification 151+40 represents 15,140 feet. The distance to the adjacent side street is also shown in feet. Finally, the proposed median configuration is shown. Full median openings, directional openings, or "none" were assigned to each cross street based on the previously described methodology.

A full median opening was considered to be a median opening that serviced a left in, left out, and U-turn movement since all intersections along Bannerman Road are "T" intersections with the exception of Tekesta Drive. A directional median opening was considered to be a median opening that serviced a left in and left out movement while restricting the U-turn movement with an raised island in the median opening.

Table 6.11: Intersection Location and Priority

Priority Ranking	Street Name / Access Point	Station	Distance to Adjacent Access Point (Feet)	Propose Median Opening Type
5	Reynolds Drive	151+40		Subject to Final Engineering
			300	
1	Tekesta Drive	154+40		Full
			760	
4	McClure Drive	162+00		**Full
			1,440	
10	Trinity Community Church	176+40		Directional
			700	
3	Summit Ridge	183+40		*Directional
			460	
7	Standing Pines	188+00		*Directional
			1,100	
8	Duck Cove Road	199+00		*Full
			1,020	
9	McBride Point	209+20		Directional
			1,260	
2	Quail Common	221+80		Directional
			1,480	
6	Business Entrance	236+60		Full

*Does not meet Access Management Guidelines
**Queue storage will be designed to accommodate westbound left turns onto Reynolds Drive

Tekesta Drive is the signalized intersection within the proposed widening portion of Segment 3, therefore it was ranked as the number one priority and a full median opening is necessary. There are more houses on the north side of Bannerman Road, which elevates Quail Common Drive and Summit Ridge Drive near the top of the priority list. Because both of these intersections are "T" intersections, a directional median opening will continue to service the existing turning movements. These two intersections will have a left turn in deceleration lane and a left turn out median opening, as well as a right turn in deceleration lane.

McClure Drive is fourth in priority, and that intersection will receive a left turn in deceleration lane and median opening, a right turn deceleration lane, as well as a left turn out median opening. Next on the priority list is Reynolds Drive. Reynolds Drive and McClure Drive intersect within the residential development south of Bannerman Road. Due to the proximity of Reynolds Drive and Tekesta Drive, access to Reynolds Drive does not meet the access management standards. Further evaluation, engineering study, and public involvement will be conducted prior to a decision being made regarding these intersections.

The entrance to the shopping center on the corner of Bannerman Road and Thomasville Road was ranked 6th, but this portion of the roadway is currently four-laned and is not planned for

future improvements. Standing Pines Lane, Duck Cove Road, and McBride Point are residential neighborhoods with 18, 17, and 12 homes, respectively. Standing Pines Lane and McBride Point will have directional openings with a left turn deceleration lane, directional median opening, and left turn out access. Duck Cove Road will have a full median opening with a left turn in deceleration lane, left turn out capability, and a U-turn deceleration lane. The U-turn lane at this intersection will serve as the eastbound access point for New Bethlehem Church and Greater Springhill Missionary Baptist Church; therefore the intersection is required to be a full opening. Trinity Community Church will receive a directional opening that will also accommodate left-in and left-out traffic movements.

6.7. SUMMARY OF PUBLIC INVOLVEMENT

The Public Involvement Process initiated by Leon County is a process that actively engages stakeholders in the decision making process. Known formally as the Transportation Corridor Study Public Participation (p2, pronounced "p-squared") Program, the intent of the Public Participation Plan is designed to fully acknowledge the value of community engagement at all levels, as required by Leon County Policy No. 03-07. Our Public Participation theme is: Focus on Community, and it is designed to: 1) educate the community about the project; 2) receive community input as the project progresses; and 3) provide feedback to the community about project decisions. In accordance with the p2 process, three pivotal components were facilitated by the project team. These components include:

- Public Outreach initiatives
- Formation of the Citizens Advisory Committee (CAC)
- Multiple Open House public meetings

These meetings were held in order to give those interested the opportunity hear details about the project and to express their views concerning the location, conceptual design, social, economic, and environmental effects of this project.

6.7.1. Public Outreach

As part of the public involvement process, extensive outreach initiatives were undergone by the project team. The purpose of this process is to provide an outlet for stakeholders to become active in the planning and decision making process. As part of the public outreach campaign, the following outreach tools were extended to the Bannerman Road corridor area:

- **Email and E-Newsletters**
  An e-mail account was created, bannermanroad@leoncountyfl.com. This e-mail is displayed as contact information and used as a tool for concerned citizens to ask questions and express their concerns.
- **Flyers and Brochures**
  Identify area community and business leaders, educators, government agencies, and special interest groups that can serve as resources and/or participants in the preparation of the study. Key contacts will be established from sources such as: Citizen Advisory Committee (CAC), neighborhood associations, the faith community, community opinion leaders, crime

Bannerman Road
Corridor Study

Public Meeting May 19th to Discuss Bannerman Road Corridor Study Alternative Roadway Plans

The Leon County Department of Public Works will host a public meeting to discuss its Bannerman Road Corridor Study on Thursday, May 19th, from 6:00 PM to 8:00 PM, at Canopy Roads Baptist Church, 925 Bannerman Road, east of Meridian Road.

In 2010 the Leon County Department of Public Works authorized the RS&H engineering consultant team to perform the Bannerman Road Corridor Study. The goal of the study is to produce a preferred alternative for the Bannerman Road corridor which, is approximately 4.6 miles long, between Thomasville Road and Meridian Road. The study evaluates the projected transportation needs of the residential and commercial sectors along and surrounding Bannerman Road.

At the May 19th public meeting, the Bannerman Road Corridor Study project team will unveil a series of roadway alternatives, some of which include a variation in the number of lanes, sidewalks, and multi-use paths. The Study Team consists of Leon County staff, RS&H team staff, and the Bannerman Road Citizens Advisory Committee members, appointed by the Leon County Commissioners.

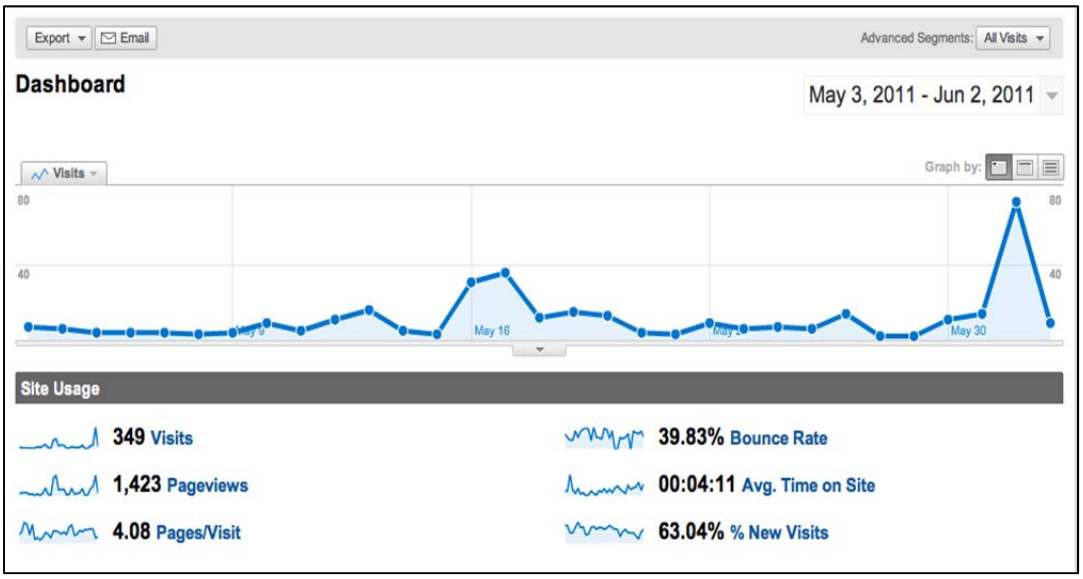
The meeting will be in three parts. First, during an informal session from 6:00 to 6:30, the public will have time to scan aerial photos of alternative Bannerman Road corridor plans and talk one-on-one with Leon County public works engineers, RS&H team consulting engineers, and the

The next Public Open House for the Bannerman Road Corridor Study project team will be held Thursday, May 19, 2011, from 6:00 PM to 8:00 PM, at Canopy Roads Baptist Church, 925 Bannerman Road, Tallahassee, FL 32312.

watch committees, civic organizations, small and large business owners.

- **Project Website, www.bannermanroad.com**
  A project website was developed in an effort to keep the public notified of the project progress, upcoming meeting schedule, and provide an avenue to send comments to the CAC Members through the County Staff.

Feedback from all sources was generally abundant and positive in nature, and helped guide the process by keeping residents and business owners informed of the process.



6.7.2. Formation of the Citizens Advisory Committee

A cornerstone of the Public Involvement Process was the formation of the Citizens Advisory Committee, or CAC, is part of Leon County Policy p2 process. The p-squared program is intended to augment the traditional transportation corridor public meeting/hearing process by including citizens, appointed by the Board, in the transportation consensus building process.

CAC meetings were held throughout the duration of the project. Members on the CAC are representatives of the community who can provide valuable insight through the life of the project development process. Continuous communication with the CAC was important in exchanging key information between interests groups and the project team for use in the development of the project. This process allowed for direct communication with stakeholders who have a wide variety of perspectives in the area.

The Bannerman Road CAC is composed of seven citizens, each appointed by a Leon County Commissioner. CAC Meetings were announced through the County's website as well as through the Project website, www.bannermanroad.com. The first CAC meeting was held on July 21st, 2010 at the Leon County Public Works Department. Subsequent CAC meetings were held at the Bradfordville Community Center (Old School House) and Trinity Community Church. CAC meeting dates include:

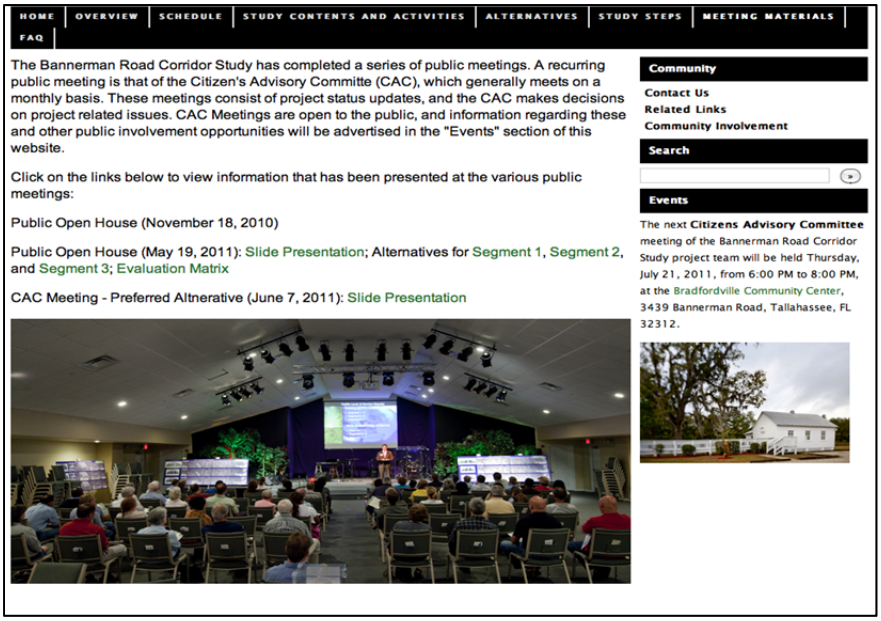
- July 21, 2010
- August 12, 2010
- October 27, 2010
- January 12, 2011
- February 9, 2011
- April 6, 2011
- June 7, 2011
- July 21, 2011
- September 27, 2011
- October 25, 2011
- April 19, 2012
- May 22, 2012
- October 17, 2012

CAC meeting minutes can be found with the public involvement records in **Appendix F**.

6.7.3. Open House Meetings

There were three public open house meetings held by the project team. The first public open house was held November 18, 2010 at the Bradfordville First Baptist Church. The purpose of this meeting was to provide an overview of the project and allow citizens to express their opinions regarding the corridor study. A total of 99 attendees signed in, and 43 comments were made in reference to the project. Citizens were asked to fill out comment cards indicating if they are a property owner along the corridor or frequent traveler along the corridor, and were given the opportunity to express concerns they had with the project. The primary issues that were reflected in the comment cards were:

- Noise
- Bike Facilities
- Turn Lanes
- Sidewalks
- Drainage
- Widening
- Safety
- Ditch vs. Curb and Gutter
- Median
- Beautification
- Notification

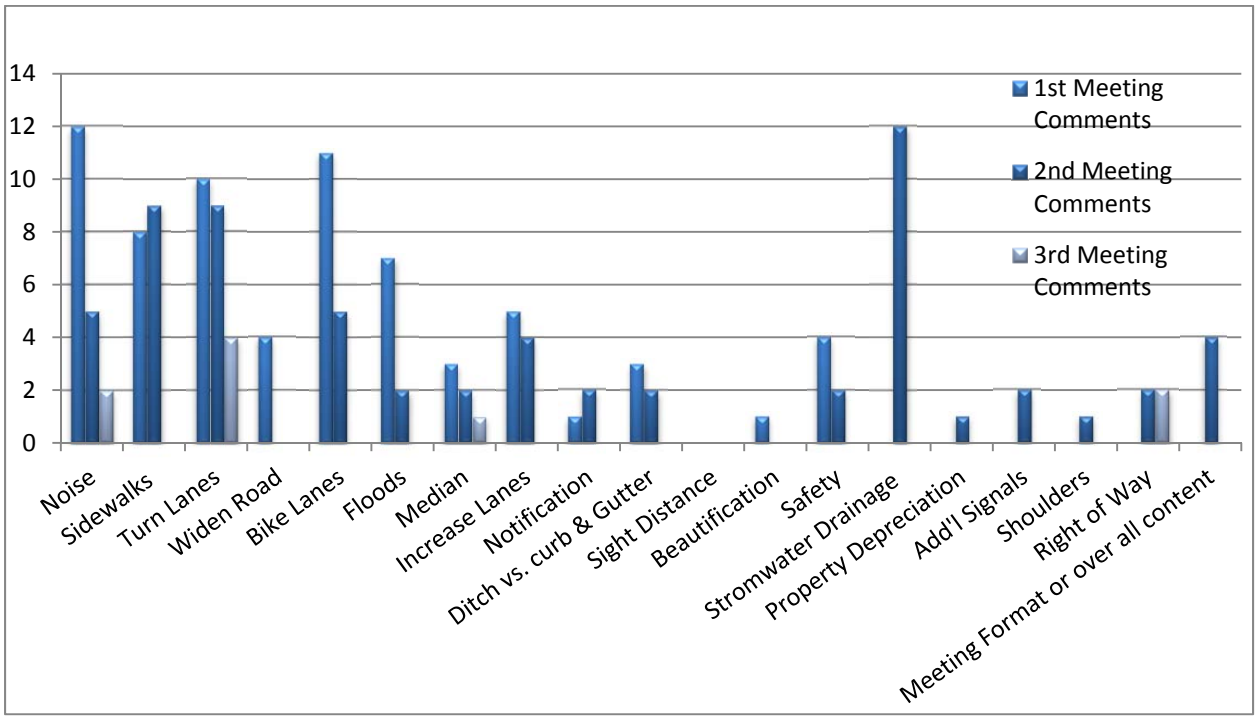


These issues were taken into consideration as the project alternatives were developed. The ideas and concerns expressed at this first meeting were applied to conceptual design, and played a crucial role in development of the decision-making criteria.

A second public meeting was held on May 19, 2011 at Canopy Roads Baptist Church. The purpose of this workshop was to provide citizens with information about the project and present the initial alternatives under review along the corridor. A total of 80 attendees signed in, and 49 comments were made regarding the project. Comments were similar to

that of the first meeting, but storm water and drainage comments were the dominant concern at the May meeting. **Figure 6.11** depicts the types of public comments and the number of comments for each category.

Figure 6.11: Public Meeting Comments by Type



A third and final Open House was held on May 3, 2012 at Canopy Roads Baptist Church. The purpose of this meeting was to provide the results of the Corridor Study, present the preferred alternative, and accept comments regarding the preferred alternative. There were 73 attendees with 13 comments received. The comments focused on the following issues:

- Turn Lanes
- Noise
- Funding
- Pedestrian/Bicycle facilities
- ROW acquisition
- Stormwater

The Open House public comments can be found with the public involvement records located in **Appendix I**.

7.0 PRELIMINARY DESIGN ANALYSIS OF THE PREFERRED ALTERNATIVE

7.1. Right of Way Requirements

A complete right-of-way cost estimate was completed based on the 30% plans. The estimate results are provided in **Table 7.1** below.

Table 7.1: Right-of-Way Summary

ITEM	SEGMENT 1 (From Meridian Road to Bull Headley Road) 48 Parcels	SEGMENT 2 (From Bull Headley Road to Tekesta Drive) 16 Parcels	SEGMENT 3 (From Tekesta Drive to Thomasville Road) 26 Parcels
R/W SUPPORT COST (Phase 41)	$360,000	$120,000	$195,000
R/W OPS (Phase 4B)	$1,048,800	$512,600	$561,100
R/W LAND COSTS (Phase 43)	$2,268,000	$6,160,700	$3,439,500
R/W ACQUISITION CONSULTANT (Phase 42)	$480,000	$160,000	$260,000
RELOCATION COSTS (Phase 45)	$169,000	$276,000	$63,000
TOTAL ESTIMATE (All Phases)	**$4,325,800**	**$7,229,300***	**$4,518,600**

* Minimizing or avoiding a take on the gas station (parcel 546), and on the Bannerman Office Condominium units (parcels 548, 28, 542, 421, 479, 472) may reduce the segment 2 estimate to approximately $2.4M

7.2. Preliminary Cost Estimates

Cost estimates were completed based on the 30% plans. Right-of-way costs were included in the previous section. The evaluation matrix for each of the Segments are shown on the following pages in **Table 7.2** thru **Table 7.4**.

Table 7.2: Segment 1 Evaluation Matrix

Segment 1	Alternative A
Meridian to Bull Headley	Multi-use Path, Swales
Social / Cultural Impacts	
Residential Impacts (parcels)	34
Residential Relocations (number)	5
Commercial Impacts (parcels)	1
Commercial Relocations (number)	0
Special Use (number)	0
Vacant / Unimproved (parcels)	12
Stormwater Pond Impacts (parcels)	0
Stormwater Pond Impacts (acres)	0.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.2
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	0
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 1,960,000.00
Final Design and CEI (dollars)	$ 390,000.00
ROW Cost (dollars)	$ 4,325,800.00
Total Cost $$[1, 2, 3]	**$ 6,700,000.00**

1. All associated costs reflect 2012 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates are preliminary and are expected to change over time and as more detailed design is completed.

Table 7.3: Segment 2 Evaluation Matrix

Segment 2	Alternative A
Bull Headley to Tekesta	Multi-use Path, Swales
Social / Cultural Impacts	
Residential Impacts (parcels)	0
Residential Relocations (number)	0
Commercial Impacts (parcels)	6
Commercial Relocations (number)	7
Special Use (number)	1
Vacant / Unimproved (parcels)	9
Stormwater Pond Impacts (parcels)	0
Stormwater Pond Impacts (acres)	0.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.2
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	1
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 1,320,700.00
Final Design and CEI (dollars)	$ 260,000.00
ROW Cost (dollars)[1]	$ 7,229,300.00
Total Cost $$[2, 3, 4]	**$ 8,800,000.00**

1. Minimizing or avoiding a take on the gas station (parcel 546), and on the Bannerman Office Condominium units (parcels 548, 28, 542, 421, 479, 472) may reduce the Segment 2 estimate to approximately $2.4M.
2. All associated costs reflect 2012 dollars.
3. The total estimated project costs are rounded to the $100,000.
4. The cost estimates are preliminary and are expected to change over time and as more detailed design is completed.

Table 7.4: Segment 3 Evaluation Matrix

Segment 3	Alternative A
Tekesta to Thomasville	Swales, Widen South
Social / Cultural Impacts	
Residential Impacts (parcels)	16
Residential Relocations (number)	0
Commercial Impacts (parcels)	0
Commercial Relocations (number)	0
Special Use (number)	4
Vacant / Unimproved (parcels)	6
Stormwater Pond Impacts (parcels)	1
Stormwater Pond Impacts (acres)	1.00
Pedestrian/Bicycle Facilities (PED/BIKE/BOTH)	BOTH
Maintenance of Traffic ($, $$, $$$)	$
Environmental Impacts	
Wetlands Impacts (acres)	0.3
Floodplains (acres)	0.0
Threatened and Endangered Species (high, medium, low)	Low
Potential Contaminated Sites (number)	0
Noise Impacts (low, moderate, high)	Low
Estimated Costs	
Construction Cost (dollars)	$ 9,147,900.00
Final Design and CEI (dollars)	$ 1,830,000.00
ROW Cost (dollars)	$ 4,518,600.00
Total Cost $$[1, 2, 3]	**$ 15,500,000.00**

1. All associated costs reflect 2012 dollars.
2. The total estimated project costs are rounded to the $100,000.
3. The cost estimates are preliminary and are expected to change over time and as more detailed design is completed.

7.3. 30% Design Plans

A conceptual design (30% design) of the preferred alternative is provided in **Appendix J**.

APPENDICES

A. DRAINAGE REPORT

B. PHASE I ROADWAY SOIL SURVEY

C. PRELIMINARY INFILTRATION INVESTIGATION

D. NOISE STUDY TECHNICAL MEMORANDUM

E. AIR QUALITY TECHNICAL MEMORANDUM

F. LEON COUNTY SPECIES

G. TRAFFIC COUNTS AND TRAFFIC DATA

H. TRAFFIC OPERATIONAL ANALYSIS

I. PUBLIC INVOLVEMENT DOCUMENTS

J. 30% ROADWAY PLANS

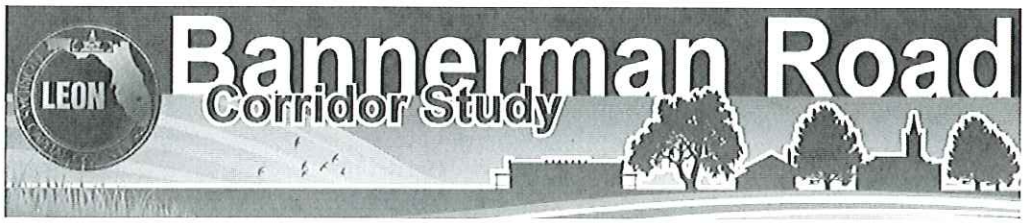
Appendix A

Drainage Report

The LPA Group, Inc.
A Unit of Michael Baker Corporation

Bannerman Road Drainage Report - 30%

Prepared for RS&H
May 2012, Revised October 2012



The LPA Group, Inc.
A Unit of Michael Baker Corporation

Bannerman Road Drainage Report - 30%

Prepared for RS&H
May 2012, Final Revision November 2012

11/5/12

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INTRODUCTION & BACKGROUND

On June 8, 2011, the Citizens Advisory Committee (CAC) voted to recommend Alternate A for all three segments developed in the Bannerman Road Project Development and Environment (PD&E) Study to the Leon County Board of County Commissioners. This recommendation was accepted and approved by the Commissioners for development of the 30% plans. This report provides additional refinement to the Alternate A concepts and updated cost estimates for the project.

The Bannerman Road Corridor is approximately 4.4 miles long, and runs between Thomasville Road and Meridian Road north of Tallahassee, Florida. The project is broken into three segments from west to east as shown in the map below:

Segment 1: Meridian Road to Bull Headley Road (1.66 miles)
Segment 2: Bull Headley Road to Tekesta Drive (1.08 miles)
Segment 3: Tekesta Drive to Thomasville Road (1.69 miles)

The segments have diverse planned uses, regulations and stormwater design requirements. Based on the alternates developed under the guidance of the CAC in the PD&E Study, Segments 1 & 2 each had three alternates that proposed the addition of either one or two sidewalks or a multi-use trail without changing the existing roadway. Segment 3 had three alternates that widen the existing two 11 foot

travel lanes roadway section to four 12 foot lanes, a 10 foot wide multi-use trail with either a rural or urban section each with a 22 foot curbed median. The selected design concept for each segment is detailed in this 30% design documentation report

EXISTING CONDITIONS

There are three main drainage watersheds within the Bannerman Road Corridor: Lake Iamonia Basin, Lake Jackson Basin and Lake McBride Watershed (Lake Lafayette Basin). These are shown on the watershed basin map included in Appendix A.

The existing conditions for all three segments of Bannerman Road include two 11-foot travel lanes, a grassed shoulder and roadside ditches to convey runoff to the appropriate outfall point. Except where local improvements have been provided at the Meridian Road, Tekesta Drive and Thomasville Road intersections, no roadway stormwater treatment is provided other than that provided by flow in the vegetated roadway ditches. There are proposed and permitted improvements by Leon County to the intersection at Bull Headley Road and north of Bannerman Road at Treaty Oaks Trail that have not yet been constructed.

Segments 1 and 2 of the corridor tend to cross well defined drainage features and have fairly significant relief, a significant cross-slope and a constrained section on narrow right of way. These segments have a less dense residential population than Segment 3.

Segment 3 begins at Tekesta Drive, a major access point to the Killearn Lakes Residential Development, and ends at Thomasville Road. The eastern end of Segment 3 has already been widened to four lanes as part of the Thomasville Road Improvements at the intersection of Bannerman Road and Thomasville Road. Segment 3 generally runs along the ridge between three drainage basins with some significant grades as the alignment crosses the natural drains. A major power line runs parallel to the roadway and the Killearn Lakes green space on the north side.

Drainage maps of the corridor, FEMA Flood maps, and a full inventory of existing sidedrain and cross drain culverts within the project limits are provided in the plans and Appendix A. Several areas were identified during the initial phases of the study effort as having drainage problems. These areas were shown on the Areas with Known Flooding Issues exhibit also in Appendix A. The flooding issue just east of Lantern Light Road (Lane?) was identified as one of the existing flooding location. The Preferred Alternate did not recommend or include roadway improvements within Segments 1 & 2 and therefore would not provide any flood relief for those locations. Detailed study and design to develop stormwater enhancements and flood mitigation necessary to address this and other flooding locations may be authorized and added to the multi-use path project scope during the Final Engineering phase.

DESIGN CONSIDERATIONS

The Bannerman Road Corridor Study scope necessitated development of stormwater design options for each segment. Each segment has unique stormwater requirements that were considered during the preliminary design process. This 30% report refined the preliminary design concepts identified in the PD&E Corridor Study Drainage Report.

Several factors played a significant role in the development of the project drainage/stormwater management approach. These included stringent environmental requirements, extremely poorly draining soils, significant topography, utilities, maintenance, right of way impacts and land use restriction and values.

Environmental Regulations - Governing regulations include:

- Leon County General Requirements
    - Bradfordville Special Requirements
    - Lake Jackson Basin requirements
- Northwest Florida Water Management District (NWFWMD) requirements

Further discussion of the requirements can be found in the **REGULATIONS** section and in Appendix D in the original PD&E Study. Discussions with Leon County Public Works (LCPW), Leon County Growth and Environmental Management (LCGEM) and the (NWFWMD) have been on-going during the stormwater conceptual design. This coordination has been critical to providing solutions that will meet all requirements and reduce costs for the project.

Geotechnical Conditions – In conjunction with the stringent regulations, the extremely poorly draining soils along the Bannerman Road corridor strongly influenced the stormwater design. Further discussion of the geotechnical exploration can be found in the **GEOTECHNICAL** section and in Appendix C.

Topography – There is significant longitudinal and transverse relief throughout the corridor. Existing grades approach 10% in Segments 1 & 2 and 5-6% in Segment 3. There is significant cross-slope again most severe in Segments 1 & 2. Segment 3 is typically tends to follow the watershed ridge divide for much of the segment.

Utilities – There should be minimal utility conflict in Segments 1 & 2. In Segment 3 there are several underground utilities that potentially conflict with the underground storage which may need to be relocated. Any expansion of underground utilities will need to be fully coordinated and also carefully installed to avoid affecting the underground storage system. In addition there is a major electric overhead distribution line on the north side that uses 300-foot pole spacing. The proposed design will provide access to the poles and the trail can be designed to support service vehicles if necessary.

Maintenance Considerations – The underground retention area in Segments 1 & 2 will include wrapping the gravel trench with a fabric to facilitate removing and cleaning/replacing the gravel portion. The swale infiltration underground storage system in Segment 3 will require that maintenance activities must limit the use of heavy or wheeled equipment to avoid compaction or rutting and disturbance to the infiltration surface and subsurface storage zone. Although infrequent, periodic rejuvenation of the

swale bottom will be required to maintain regulatory recovery requirements. Monitoring of recovery times will be necessary to determine when maintenance is required in all segments.

Right-of-Way impacts and land value also placed major constraints on the proposed design throughout the project. Segments 1 & 2 are characterized by single-family residences on moderately sized parcels with several planned developments. The Killearn Lakes development borders the project for all but the east transition portion resulting in numerous property owners on the north side. The design for Segment 3 includes utilizing the present powerline corridor and a significant portion of the Killearn Lakes Home Owners Association (HOA) Green Space but avoids the individual properties. Typically, there are larger properties and residences on the south side, which typically reduces the impact to the individual properties.

PROPOSED PROJECT DESIGN CONCEPTS

Segments 1 & 2 – The project design provides a 10-foot multi-use trail north of the road for recreational pedestrian and bicycle use. The trail is located parallel to and offset from the existing westbound roadway ditch. The design constructs the multi-use trail without involving the westbound roadway ditch section or the existing roadway. Minimal stormwater impacts result from the trail construction since the trail related improvements do not alter or affect the present roadway drainage. In addition to the under trail capture and storage system, a sodded ditch is used when appropriate to intercept runoff from larger upland areas and convey flow along the trail to present outfalls. The interceptor ditch is provided when the overland flow distance is significant where typically sheetflow conditions no longer exist. Culverts will be provided under the trail to maintain current drainage patterns such as where defined drainage ways or concentrated flow crosses the trail. An aggregate storage area under the multi-trail provides stormwater runoff retention for the 10 foot multi-trail improvement.

Segment 3 – The design expands the existing 2-11 foot lanes to 4-12 foot lanes rural section. A 22 foot raised curbed median provided for most of the segment. Swale roadway ditches are proposed for each roadway. This design has a proposed minimum standard right of way width of 156 feet. Where possible the existing 22 feet of pavement is used as the westbound twp lanes with the additional two eastbound lanes located to the south. A 5 foot paved and 3 foot grassed shoulder is provided in each travel direction. The 10-foot multi-use trail is on the north side of the roadway. Similar to Segments 1 & 2, an interceptor swale will be constructed anywhere significant offsite areas drain to the roadway. Since the retention swale ditches are considered “on-line retention facilities”, the interceptor ditch isolates project runoff from off-site flows and avoids the need to provide treatment for the off-site areas. Addition runoff is discharge to existing drainageways. Culverts are provided under the trail and under the 4 lane roadway to maintain current drainage patterns. An underground aggregate storage area under the trail and swale ditch supplemented with a storage chamber under the trail is provided for stormwater treatment. Stormwater management ponds are not necessary except at the Tekesta Drive intersection. A pipe storm drain system will collect project runoff and discharge into a retention pond west of Tekesta. A second storm drain system will be places under the sidewalk to collect off-site runoff and discharge to the cross-drain west of Tekesta Drive. For the remainder of the project linear on-line retention ditches and infiltration are used to provide the required stormwater management.

Typical roadway sections are included in Appendix B. A detail of the 10 foot multi-purpose trail storage area is provided in Appendix F. Supporting calculations are provided in Appendix E.

STORMWATER MANAGEMENT DESIGN DETAILS

The stormwater management concept throughout the corridor is dictated by stormwater retention and recovery requirements. These requirements necessitate the use of infiltration of the required treatment volume (TV) and also any additional attenuation volume (AV). Extremely low vertical infiltration rates in the Bannerman Road corridor from a shallow layer of permeable soils which lie above a very thick layer of highly impermeable soils. The most effective infiltration method to meet retention requirements was determined to be an on-line linear system to utilize the horizontal component of infiltration. Leon County allows a continuous simulation of historical rainfall events in lieu of utilizing a design event analysis. Based on preliminary calculations in the PD&E study, a storage volume 2-3 times the required treatment volume is necessary to meet the Continuous Simulation standard. Underground storage in the linear systems provides the necessary additional storage volume during the recovery period.

Infiltration Recovery

The Bannerman Road project utilizes two types of infiltration recovery designs, one for Segments 1 and 2 and the second in Segment 3. The two design concepts are discussed in the following paragraphs.

Segments 1 & 2 – A 2.5 foot average deep aggregate area is provided under the full 10 foot width of the trail for retention and infiltration. This retention storage area is filled with clean coarse sand having a design 30% usable void space. This provides 7.5 cubic feet of storage volume per foot. A gravel filled trench 2 feet wide is constructed adjacent to the trail. The gravel (30% voids) provides an additional 1.7 cubic feet of storage volume per foot of trail. The 0.02'/1' cross-slope on the trail directs the trail runoff to the gravel filled trench. The gravel captures the runoff and distributes it to the sand retention zone. A geotextile (filter fabric) is used both between the aggregates (sand to gravel) and the aggregates and the native soil to prevent migration of finer material into the coarser material. A detail of the design is provided in Appendix F. Based on the trail grade, "breaks" in the aggregate sub-base storage trenches are used to prevent longitudinal and sidehill piping and seepage discharges. The frequency of the breaks will be set by the trail profile grade. The horizontal trail location will be located sufficiently distant from the roadway ditch backslope to avoid developing a backslope seepage condition in the existing roadway ditch. Both will be set from final sampling and geotechnical recommendations.

Segment 3 – The stormwater management system is by definition is an on-line retention system. It consists of several components; (a) a swale type roadway ditch to hold the required treatment volume; (b) a soil designed to remove sediments and suspended solids; (c) a storage zone with a volume sufficient to achieve infiltration recovery; (d) and an infiltration interface with the natural soils. The following describes these components:

(a) Swale type roadway ditch

- A 10-foot bottom width sodded ditch (1:4 front slope and 1:3 backslope) will be provided on both roadways to capture and hold the required Treatment Volume (TV) of runoff. The TV ditch would be enlarged as necessary to provide any additional storage required to meet pre-post discharge requirements from larger storms.
- The roadway profile requires ditch blocks to create a series of linear impoundments in the ditch. Runoff in excess of the TV would discharge over the ditch blocks in cascade fashion until reaching the basin outfall location. To assure they retain the required control elevations, the ditch blocks are faced with 4" concrete pavement.
- An outfall structure is located at the sub-basin outfall location. A skimmer or other device would be provided to capture floatables and oils.

(b) Engineered soil layer
- 12 inches layer of an engineered soil is provided above the primary storage zone.
- The engineered soil layer is design to infiltrate the TV to the storage zone within 24-36 hours. The engineered soil would be a select soil such as an SPSM or an A-3 soil to provide a controlled infiltration rate to the subsurface storage zone.
- The engineered soil layer effectively removes sediments and most suspended particles. The engineered soil should eliminate the need to replace the subsurface storage zone.

(c) Trench Storage Zone
- The existing fine grained soils are removed and replaced with a soil with more useable void space to create a storage zone. The storage is necessary to achieve infiltration recovery.
- The trench will be filled with fine aggregate (sand) and a 6" layer of coarse aggregate (gravel). Both aggregates have approximately the same void space (30%).
- The coarse aggregate (gravel) is provided to assure full utilization of the trench bottom width for infiltration.
- The trench will be wrapped with a geotextile to prevent soil migration between fine and coarser materials and also between sand and gravel layers.
- Consideration in the final design would be to replace the gravel with a 3 dimensional geotextile and sand if it is determined to be cost effective.

(d) Infiltration Surface
- The gravel layer assures that sufficient stormwater is always available to maximize infiltration.
- Geotextile (filter fabric) will be used below the gravel to provide separation between the gravel and native soils to prevent migration of fine native soil into a coarser material.
- Underlying soil would be scarified and lightly compacted prior to trench construction.

The performance of the engineered soil must be monitored and the swale ditch bottom rejuvenated or replaced when the TV recovery time exceeds the BSA 72 hours requirement. Minimizing erosion and sediment deposition on the engineered soil layer during the construction and stabilization period will be critical for good initial performance. Covering the engineered soil with a fabric will be required, with removal of the fabric and placing the final sod covering only near the end of the construction project.

Note: A modification of this system that was considered was a deep "sand chimney" trench rather than the relatively shallow storage zone in the hope that the trench would penetrate sand lenses. This option was explored during the PD&E phase to determine if these favorable soils were present. The geotechnical survey did not encounter lenses within any of the 25-foot borings, and the deep sand chimney trench was eliminated as a feasible option. If sand lenses are encountered in the final design soil investigation, the use of sand chimneys in these locations will be considered.

Subsurface Stormwater Chambers

Subsurface stormwater storage chambers were found necessary in Segment 3 to increase storage capacity within limited right of way areas. This feature was added to the westbound roadway under the 10' trail. Though inaccessible, this location provides protection from future utilities and service vehicles damage. In accordance with the manufacturer's recommendation, the need for periodic maintenance of the chamber system has been addressed in the proposed design since there will be no direct discharges into the chambers, with all runoff being filtered through the special engineered soil and several additional feet of sand aggregate as described above. Although the need for maintenance access has been addressed with this design, the storage units can be modified to accommodate full maintenance access. The under-trail location prevents the direct wheel loading from maintenance equipment, power line service trucks and also errant vehicles. Cut-sheets of a suitable product and installation details are provided in Appendix F.

Conventional SWMF "Pond"

A SWMF is required for Basin 3-1 at the west end of Segment 3. The topography and limited right-of-way preclude the effective use of the swale storage approach. The existing SWMFs in this area have experience difficulty meeting recovery requirements. The selected pond site is located where the parent tract and possible adjacent development could be combined into a Regional facility. Preliminary borings were not available at the site so infiltration data from nearest test were used to establish the pond requirement. The pond size was determined using the Leon County Continuous Simulation procedure. Specific soil testing of this site is required.

REGULATIONS

A significant time period may occur between this 30% report and Final Plans and Construction documents. A detailed review of the stormwater management regulations in effect will be necessary.

There are many stormwater standards that apply to the Bannerman Road Corridor. The regulating bodies include the NWFWMD and Leon County. There are special regulations in the Leon County Land Development Codes regarding the BSA and Lake Jackson Basin Protection Area. Applicable criteria for the various drainage watersheds are tabulated for each segment. Specific regulations are discussed in the following subsections. The full text of the applicable sections in effect during the study phase is provided in Appendix D of the PD&E Study. Links to the regulations are provided.

	NWFWMD	Leon Co	BSA	Drains to Lake Iamonia Basin	Drains to Lake Jackson Basin	Drains to Lake McBride Watershed
Segment 1	x	x		x	x	
Segment 2	x	x	x		x	
Segment 3	x	x	x	x	x	x

NWFWMD (http://www.nwfwmd.state.fl.us/permits/erp/erp_downloads/AH_Engineering.pdf)

- Open basins: Pre-post flows for 2-yr 24-hr and 25-yr 24-hr with SCS Type III distribution and Antecedent Moisture Condition (AMC) II (Part III 3.3 ERP AH Volume II)
- Closed basins: Pre-post runoff volume and peak rate flow for 25-yr 96-hr storm (Part III 3.3 ERP AH Volume II)
- SWMF's are considered as impervious for pre-post runoff calculations (Part IV 4.10 AH Volume II)
- On-line retention (including exfiltration): Retain runoff from 1.0" of rainfall, with a minimum retention volume of 0.5" of runoff from the contributing area discharging to Class III water bodies, with an additional 50% if directly discharging to OFW, recover within 72 hours with average AMC (Part IV 4.12 AH Volume II, Part V 5.0-5.5 ERP AH Volume II) (The proposed design is considered to be "on-line")

Leon County

(http://library.municode.com/HTML/10008/level3/COLA_CH10LADECO_ARTIVENMA.html#TOPTITLE)

- Open basins: Pre-post flows up to and including 25-yr storm, discharge only if downstream facilities are adequate with no offsite impacts (Sec. 10-4.302)
- Closed basins: Pre-post retention of runoff volume up to 100-yr 24-hr storm, recover ½ volume in 7 days and the total volume in 30 days (Sec. 10-4.301.(3)(b))
- On-line retention or detention with underdrained filtration: 75% of runoff from the first 3", or for drainage areas less than 100 acres, the first 1.125" of runoff; underdrained option must recover the treatment volume within 36 hours (Sec. 10-4.301.(2)(b) (iii)).
- Retention must recover ½ of the volume in 7 days and the total volume in 30 days (Sec. 10-4.303. (14)).

- **<u>Bradfordville Study Area (BSA)</u>**

  The BSA limits within the Bannerman Road corridor (Segments 2 and 3), included in Appendix A, established more stringent stormwater standards that were incorporated into the Leon County Land Development Codes Sec. 10-4.301.(5) and Sec. 10-4, Subdivision 5. Key stormwater design criteria for the selected types of facilities and recovery methods are listed below.

- On-line dry retention: Retain on-site the runoff volume equal to 4 inches times the on-site impervious area, with 100% treatment volume recovery in 72 hrs.
- Maximum irrigation rate of 1.5 inches per week. If desired or necessary, the proposed westbound roadway manufactured storage cells could serve as a potential reservoir for a median landscape irrigation system.
- The retention volume must recover within the time frames above unless an approved continuous analysis, using Tallahassee Airport rainfall data from January 1, 1959 to December 31, 1998, demonstrates that the total volume retained within the stormwater system over the 40-year period is greater than or equal to that retained by a dry retention system.

The BSA on-line retention recovery time is 72 hours. The extremely low infiltration rates in the Bannerman Road corridor would preclude recovery within this time period. Continuous simulation analysis is an alternative procedure to show that the proposed facility would perform adequately over the 40-year simulation period. Based on discussions with LCGEM staff and our initial calculations, a storage volume between 2-3 times the 4-inch treatment volume will be necessary to meet the BSA on-line dry retention criteria with a continuous simulation analysis.

- **Lake Jackson Basin Protection Area**

  The Lake Jackson Basin Protection Area has additional stormwater requirements for non-single-family residential development in the Leon County Land Development Codes Sec. 10-4.301.(4). The requirements listed below are the design criteria considered during the conceptual design.

  - Retain post development stormwater on site for storm events through the 50-yr 24-hr storm.
  - Recover ½ of the retention volume in 7 days and the total volume in 30 days
  - Utilize continuous simulation if necessary

  The post development retention volume is extremely large compared to the other stormwater criteria in this corridor. Recovery of that volume is extremely difficult due to the low infiltration rates and deep impermeable soil layers in the Bannerman Road corridor.

Stormwater Exemptions

LCGEM has indicated that the existing roadway impervious area would be exempt from treatment of the BSA requirements provided that the existing roadway base is not disturbed. This exemption limits the roadway improvement to the existing alignment and profile but is applicable for sections of Segment 3.

LCGEM and NWFWMD both have stormwater exemptions for sidewalks up to 6 feet wide, and NWFWMD has an exemption for recreational paths up to 12 feet wide. The exemptions are contingent upon proof of no downstream impacts, no known existing flooding issues and not placing the sidewalk or path within a wetland. This water quality exemption does not eliminate retention requirements.

Within Segment 1, LCGEM has indicated that a design using an aggregate or sand sub-base under the sidewalk(s) which can hold the Leon County retention volume of 1.125 inches over the new impervious

area should satisfy the stormwater requirements within the segment. The Lake Jackson retention requirement is the 50 yr- 24 hr rainfall of 9.5 inches. LCGEM has also indicated that a similar aggregate or sand sub-base sized to hold the 4-inch BSA requirement over the sidewalk(s) within Segment 2 will be sufficient to meet all requirements.

Project Coordination

Several meetings, emails and phone conversations were held during the PD&E phase to coordinate the project design with all parties involved. These included coordination with fellow design consultants RS&H and Environmental and Geotechnical Specialists, Inc. (EGS), as well as NWFWMD, Leon County Public Works (LCPW) and LCGEM, as well as attending most Citizen Advisory Committee (CAC) Meetings and Public Meetings. A pre-application meeting with all regulatory agencies will be scheduled when the design progresses to approximately 60% plans.

GEOTECHNICAL

The geotechnical sub-consultant to RS&H is EGS. EGS prepared two separate preliminary reports for the Bannerman Road Corridor. Both reports are included in Appendix C. In addition to the two reports, several meetings occurred between RS&H, EGS and LPA. EGS indicated that their experience within the immediate area indicated that historically infiltration rates would not exceed 1 inch per day, to which a design factor of safety would need to be applied. A summary of the EGS investigation report follows.

Phase I Roadway Soil Survey, October 2010. This report provided preliminary geotechnical investigation along the entire roadway corridor. It included results for 24-5.5 foot borings. Laboratory tests were performed on the soil samples including water content, grain-size distribution and Atterberg limits. Construction recommendations by EGS included avoiding deep cuts. EGS also noted that while groundwater was not encountered, perched water tables within three feet of the surface should be anticipated at some locations in the corridor after heavy rains.

Preliminary Infiltration Investigation, June 2011. This report provided preliminary infiltration and soil investigations within Segment 3 only. It included results for 18-25 foot borings as close as practical to potential SWMF sites. Laboratory tests were performed on the soil samples including water content, grain-size distribution and Atterberg limits. Groundwater was encountered in some of the borings, but this was believed by EGS to be “perched” not the permanent water table. Estimates of the perched “normal” seasonal high groundwater and the permeability of each soil stratum were also included in the report. EGS estimated that the permanent ground water was likely near Elevation 180-185 in Segment 3, below the depth of the 25-foot borings.

Other Research - In addition to the EGS investigations, permitted stormwater facilities near Bannerman Road were researched through the City of Tallahassee and Leon County permit records. It was determined that the infiltration values used in these permits did not appear to be consistent with the preliminary EGS geotechnical data. It was also noted that many stormwater facilities in the area required redesign after project completion when observed recovery failed to meet recovery time requirements.

Conclusion – Although significant preliminary soil information was obtained during the PD&E study, more detailed soil investigation is required prior to going to the next design phase. Specific information will be required at all infiltration areas to establish actual infiltration rates and water table data to use in the recovery analysis for that area. This data will determine the storage required. Additional soil borings possibly as frequent as every 100 feet in each infiltration area may be necessary and will be established following discussions with the permit agencies.

Karst Concerns

According to the EGS Phase I Roadway Soil Survey and the Tallahassee/ Leon County GIS Database, there is an area in Segment 1 near Lanternlight Road where karst conditions may be present. SWMF sites are unnecessary in this Segment, and therefore, potential karst impacts should be minimal. However, since the entire project corridor is within the NWFWMD mapped karst sensitive area, the design will be sensitive to minimizing conditions that would create sinkhole formation potential. This will be done by utilizing shallow designs and maximum infiltration surface areas to avoid undue concentration.

DESIGN CALCULATIONS AND METHODOLOGY

A conceptual level stormwater design was developed for the PD&E Study. The PD&E Study determined that the BSA and Lake Jackson requirements were the most difficult to meet, therefore they were used as the initial design criteria. Continuous simulation was determined to be the only feasible means of proving reasonable assurance for recovery of the stormwater management volumes. The corridor study calculations were run using the preliminary infiltration data to verify the swale and underground storage computation procedures met requirements. Additional infiltration tests are required for final design.

Bradfordville Study Area Continuous Analysis for Retention

The BSA continuous analysis is an option to demonstrate that a SWMF design will perform adequately over an historic 40-year design period instead of proving recovery of the 4 inch runoff BSA on-line retention volume within 72 hours. The low infiltration rates found in the Bannerman Road corridor make recovery within 72 hours impractical. The continuous analysis used spreadsheets and rainfall data provided by LCGEM.

The preliminary study analysis confirmed that a significantly greater total storage volume is required to meet even the continuous analysis standard with the rates in the June 2011 EGS Preliminary Infiltration Investigation report. Final design calculations to determine required storage volumes will require specific information within the infiltration area in each basin for use in this procedure.

Lake Jackson Basin Protection Area Retention Calculation

Only one SWMF is proposed within the Lake Jackson Basin, Basin 3-1. The LCGEM continuous analysis procedure was used to develop the minimum storage volume requirement for recovery of the Lake Jackson Basin retention volume requirement. The infiltration rate used the rate at the closest boring.

Leon County and NWFWMD Pre-Post Detention

The pre-post detention volume requirement will be calculated by comparing the pre-construction runoff to the post-construction runoff using the SCS method. Calculations indicate that the attenuation requirement will be satisfied by the ditch storage required to meet the BSA requirement. For the 60% phase, a time of concentration calculation will be provided rather than the 10 minutes used in preliminary SCS runoff calculations. Based on initial calculations, the NWFWMD pre-post for the 25-yr 24-hr storm would be the controlling storm for detention purposes. NWFWMD considers the SWMF surface as impervious area whereas Leon County considers dry retention SWMF's as pervious area. Final calculations will be provided for the full range of storm events. Preliminary supporting calculations are provided in Appendix E.

The following rainfall data was used for SCS runoff calculations:

Storm	Rainfall Depth (in)	Source	Applicable Requirement
2-yr 24-hr	4.6	NWFWMD ERP AH Volume II	NWFWMD Streambank Protection Part IV 4.5 ERP AH Volume II
25-yr 24-hr	8.5	NWFWMD ERP AH Volume II	NWFWMD Rate Control Part III 3.3 ERP AH Volume II
25-yr 96-hr	11.5	NWFWMD ERP AH Volume II	NWFWMD Volume Control (Closed Basin) Part III 3.3 ERP AH Volume II
50-yr 24-hr	9.5	FDOT Drainage Manual Appendix B Precipitation Data	Lake Jackson Leon County Land Development Codes Sec. 10-4.301.(4)
100-yr 24-hr	10.6	NWFWMD ERP AH Volume II	NWFWMD Volume Control (Closed Basin) Part III 3.3 ERP AH Volume II

Leon County and NWFWMD Retention Volumes

Leon County - Bradfordville and Lake Jackson special basin requirements exceeded the Leon County standard criteria. LCGEM indicated that basins that meet the BSA continuous analysis require no further retention recovery calculations.

NWFWMD - NWFWMD has indicated that the Leon County continuous analysis procedure may be used to show that a facility met the NWFWMD controlling on-line water quality treatment retention requirement. However NWFWMD indicated that the LC procedure must be run using NWFWMD design requirement. The procedure that they would accept requires the following 3 steps:

- Step 1 would be to provide the calculation for an ideal SWMF substituting the controlling NWFWMD treatment volume of the runoff from 1 inch of rainfall over the drainage basin for the 4" BSA treatment volume.

- Step 2 would be to use the project design to determine the actual volume retained and infiltrated.
- Step 3 would be to compare Step 2 against Step 1, and if the percentage volume retained in Step 2 was greater than Step 1, the design would satisfy the NWFWMD requirement.

At the pre-application meeting with NWFWMD, we will obtain determination if this assurance can be met with one analysis or if the LC procedure using their requirement must be run for each linear and pond facility.

Example calculations showing the Leon County and NWFWMD retention requirements were included in Appendix E of the PD&E study.

Surface SWMF Geometry

The SWMF bottom area in the 30% plans estimate was based on the maximum calculated volume requirement (retention or detention) divided by a design depth of 2 feet. An additional 1-foot of freeboard was then added to the SWMF depth. The SWMF geometries were assumed to have a 2:1 length to width ratio, 20-foot maintenance berm and 1V:2H side slopes. The resultant SWMF site size was increased by 20% to account for the conceptual nature of the SWMF design calculations and to allow for actual ground slopes at the pond site.

Stormwater Details including Subsurface Aggregate Storage

Segments 1 & 2 Pedestrian Facilities - Based on meetings with LCGEM, a design using an aggregate or sand sub-base under the 10 foot trail which can hold the Leon County retention volume of 1.125 inch over the new impervious area would satisfy the stormwater requirements within the segment for the Lake Jackson retention requirement of the 50 yr- 24 hr rainfall of 9.5 inches. NWFWMD indicated that they will accept designs and the Leon County design procedure as reasonable assurance for the ERP permit. LCGEM indicated that a similar aggregate or sand sub-base sized to hold the 4-inch BSA retention requirement over the trail within Segment 2 will be sufficient to meet all requirements.

Segments 3 Roadway and Pedestrian Facilities – For most of Segment 3 a 6 foot bottom width swale ditch is provided on each roadway. Since runoff in excess of the treatment volume will flow through the swale to the discharge point, these retention areas are considered “in-line” retention facilities. The westbound roadway swale is designed to provide all of the required stormwater management for treatment and attenuation in Basins 3-2 through 3-7. Details are provided in the following sections.

In Basin 3-1:

- An off-site retention facility is proposed for Basin 3-1 because the steeper terrain limits the capacity of the retention swales.
- A 3 foot BW conveyance only ditch is provided on each roadway draining to the west.
- A storm drainage system will begin east of the intersection to pickup the collected runoff and convey it to the pond site.
- An offsite pond will be located west of Tekesta.
- A separate storm drain system will collect off-site runoff from Tekesta Drive east to the basin divide and will discharge to the cross-drain located west of Tekesta Drive.

For Basins 3-2 through 3-7:

- The existing westbound roadway ditch will be reconstructed and changed to a shallow sodded swale designed to retain the required treatment volume for the 4 inches of runoff from the westbound roadway and trail impervious areas. The swale will infiltrate the required TV into a combination of 30% void aggregate and a high-void design storage chamber with > 90% voids. The chamber storage zone is located under the 10-foot trail.
- The new eastbound roadway will have a shallow sodded swale ditch similar to the westbound swale ditch. The 6 foot wide swale will minimize runoff from the eastbound roadway and shallow ditch blocks and select soils provided to create additional storage from minor storms. Typically the aggregate layer and manufactured storage units are not used on this roadway.
- During final design to match the treatment volume requirements with recovery capability, some use of compensatory treatment balancing may be required between roadways swale segments.

For Basin 3-8:

- The offsite FDOT pond will be used to provide stormwater management.
- The existing storm drain system within the present transition section will be modified.

Offsite Facilities

There are several existing SWMF's that may be impacted with the roadway construction project. All displaced volume from those offsite facilities will be replaced either within the roadway stormwater management system or the property owner compensated as part of the R/W acquisition cost.

DESIGN DETAILS

Segment 1 & 2

A 10-foot multi-use paved path is provided, approximately 6-10 feet north of the existing north roadway ditch. In areas where large off-site area flow to the path a "right-of-way" ditch will be used to capture the runoff and convey it to the present outfall. Smaller areas will be desired to sheet flow over the path as presently occurs. Culverts are provided where concentrated flows cross the proposed path.

Both treatment and retention will be provided in the aggregate storage zone located under the paved path. The subsurface aggregate depth was calculated based on the storage volume requirement and a specific yield of 30% from the aggregate storage area. The proposed aggregate will have a width two feet wider than the paved surface to convey the stormwater runoff to the subsurface aggregate. The required subsurface aggregate depth for the multi-use trail in Segment 1 for treatment is approximately 3 inches using the 1.125 inch over the impervious surface which is significantly less than the 50 year/ 24 hour Lake Jackson retention requirement. A 2.5 foot storage zone provides the required volume.

In Segment 2, the 4 inch BSA treatment volume requirement replaces the standard 1.125 inch LC treatment volume requirement. While a storage zone 11 inch deep would provide the required storage, the Segment 1 depth of 2.5 feet allows flexibility which is necessary to adjust for longitudinal slopes in

the sidewalk/trail profile. In the Final Design phase the storage will be closely match to the treatment requirement.

Exhibits showing the typical sections for the proposed Segment 1 & 2 design are included in Appendix B. For estimating purposes, a right of way width of 30 feet is recommended for the trail improvement. A typical section of the proposed design is included in Appendix F.

Segment 3

Segment 3 expands the two lane roadway to a four lane roadway and have a 22 foot wide raised curbed median and a 6 foot roadway swale ditch on each roadway.

Basin 3-1

Due to the Lake Jackson Basin Protection Area requirements, the topography and available vacant land, a SWMF is required in this basin. In addition, Basin 3-1 is the only basin in Segment 3 in the Lake Jackson Basin which requires retaining the post development stormwater on site for storm events through the 50-yr 24-hr storm. Possible sites considered in the PD&E study included areas south of Bannerman Road on Reynolds Drive on both sides of the road. One boring was taken near Station 13+00 (PB-1) on Reynolds Drive. The soil boring showed that an impermeable layer existed between three and six feet below the surface. Placing a SWMF in this area was judged to be not feasible due to the excavation depth and basin size requirements in light of the current residential development.

The third site identified was the tract immediately west of the Greystone residential development. Based on the tract size, using the infiltration rates found at Reynolds Drive it was determined that the estimated size required for this basin is 4.64 acres. Consideration will be given to developing either a regional SWMF size for the roadway improvement and the potential residential development plus a possible option would include an interconnection with the Greystone development SWMF's #1 and #2 if issues with that development's stormwater facilities continue. Additional geotechnical exploration will be necessary to establish the pond feasibility and size. The roadway swale ditches are sized for conveyance, with runoff collected by ditch inlets at Tekesta Drive and piped about 750 feet to the pond site. The pond emergency discharge is to a well-defined watercourse. To align the through roadways required reconstruction of the area west of the intersection which increased the SWMF size. In addition the R/W constrained northeast of the intersection and a separate storm drain system is provided to collect and bypass that area maintaining the current drainage pattern.

Basins 3-2 through 3-7

The proposed linear facilities are considered "on-line" retention. The existing two lanes become the westbound roadway. When the base is not disturbed, the BSA treatment volume requirement can be reduced by the width of the existing pavement. Near the west end of Segment 3, the raised median transitions to a striped median. Exhibits showing the typical sections are included in Appendix B.

Westbound Roadway - The existing westbound roadway ditch will be reconstructed into a shallow swale type section. Although the sideslopes meet the swale requirement, by definition the ditch cannot be considered a swale since by definition swales cannot have ditch blocks but for Bannerman Road ditch blocks are required to create a series of retention areas. The right-of-way required for the 10 foot multi-use trail and the swale ditch necessitates using the green area of the Killearn Lakes subdivision and also the area under the Talquin Electric Cooperative powerline. Each linear facility is sized to retain the required treatment volume of 4 inches of runoff from the impervious surfaces from the westbound lanes, paved shoulder and trail impervious improvements within specific basin limits. Excess runoff is discharged offsite at or below present rates and volumes. The retained runoff infiltrates into the storage zone below. The required time allotted for recovery of the treatment volume is achieved by infiltrating the in-ditch treatment volume into the storage zone under the ditch. The storage zone allows long term recovery which otherwise cannot be met due to the combination of the low infiltration rate of the underlying soils, longitudinal and cross-slope topography, roadway profile and water table limitations. Leon County has developed the continuous simulation procedure to address the low infiltration condition. The procedure requires 2-3 times the treatment volume storage. Soil storage was considered but aggregate void storage alone was found to be insufficient. To generate the necessary storage volume, a high void design storage chamber (>90% voids) rather than an aggregate filled (30% voids) was found necessary. To minimize potential damage, the storage chambers are located under the 10-foot trail. The existing soil will be excavated and replaced with a combination of manufactured storage units and clean sand aggregate. The ditch is sized to contain the 4 inches of runoff from the westbound roadway and trail impervious areas. Runoff is treated as it infiltrates a minimum through 12 inches of soil into the storage zone. The storage zone is sized to hold the cumulative treatment volume based on the usable infiltration rate of the low permeable soils found throughout the segment of approximately a ½ inch per day (FS applied). The profile grade, the water table, and the outfall location will determine the number of linear treatment areas required for each basin. In areas where the roadway grade exceeds 1%, additional supplemental storage may be necessary. Several methods are anticipated, initially utilizing a deeper aggregate zone (trench) and If necessary supplementing that with stormwater storage chambers such as a polypropylene corrugated wall chamber within the deeper trench below the ditch bottom, thus sufficiently buried to avoid damaging wheel loading. Runoff in excess of the treatment volume will flow through the ditch sections. A concrete paved spillway will be provided to connect the individual treatment sections. An outlet structure at the last ditch section will collect and discharge into the present outfall location.

Eastbound Roadway - A new eastbound roadway ditch will be constructed as a shallow sodded section similar to the westbound ditch. The required ditch volume is the 4-inch runoff treatment volume from the additional eastbound lanes and paved shoulder. The existing soil under the ditch will be excavated and replaced with a fine sand (30% voids) aggregate area to provide the necessary storage volume for recovery. Initial calculations indicated that the manufactured volume storage units will not be required for the eastbound lanes. In areas where the roadway grade exceeds 1%, additional supplemental storage may be necessary in both ditches. It is anticipated that a ditch treatment similar to the westbound roadway including both the trench and polypropylene corrugated wall chambers will be necessary below the ditch bottom.

Runoff in excess of the treatment volume will discharge into the present outfalls using a ditch inlet as a control structure. In final design iCPR routing models will be used to determine if additional surface storage is required and determine the appropriate size, shape and elevation of the control feature. Post discharge rates will be at or less than existing discharge rates for all design storm events.

Existing cross-drain pipe will be replaced using the hydraulically equivalent size as the present culvert unless calculations indicate that a larger size is warranted due to the additional pipe length required. An HY-8 analysis procedure as in InteliSOLVE's Hydraflow Express will be used for these calculations.

Basin 3-8

Stormwater management for this basin was provided for in the design of the FDOT Thomasville Road improvement. In the existing roadway 4 to 2 lane transition, the storm drain system draining the transition area included the future pavement for the full 4-lane section. This discharge was previously permitted as a part of the Thomasville Road improvements by FDOT and routed to their SWMF #4. Converting the existing curb inlets to manholes and providing new curb inlets will be required. The SWMF #4 accounting record and operation permit will need to be modified.

Special Basin Considerations

Basin 3-6

Eastbound Roadway - The watershed ridge is south of the corridor and drains to the existing eastbound roadway ditch. Although there is a definite low in the roadway profile and natural ground, there is no cross-drain within this basin. Therefore runoff from the offsite area and the eastbound roadway is stored in the eastbound roadway ditch until reaching an elevation where it will flow westward into Basin 3-5. The construction of the additional roadway lanes on the south will displace most of existing storage. To replace the existing storage volume and to provide the required treatment volume, the eastbound roadway swale ditch will be enlarged. The present overflow pattern will be maintained.

Westbound Roadway - In response to drainage issues on the north side of Bannerman Road which has resulted in problems for residents of Treaty Oaks Trail, Leon County authorized development of a drainage improvement study. The study proposed construction of a swale within the Killearn Lakes HOA Green Area, providing a shallow ditch to bring runoff to the proposed piped outfall. The design of this portion of the basin will be coordinated with the proposed or constructed improvement. Discharge will be restricted to that provided for in the drainage improvement project.

COSTS

Preliminary cost estimates for the stormwater components were developed for each of the segments. The estimates include the excavation, geotextile and the aggregates necessary to construct the underground storage facilities per linear foot of each segment and an estimate of the pipe under the

trail. **R/W costs and other costs associated with the improvements including the trail surface, selective clearing & grubbing for both the trail and the interceptor ditch, turf, sodding or other protective lining of the interceptor ditch or any additional disturbed area, and erosion control were not included in the drainage cost estimates provided in this report.**

Florida Department of Transportation District 3 March 2012 Long Range Estimate (LRE) costs were utilized whenever possible. The estimated installed cost of one manufacturer's acceptable underground storage units used in Segment 3 was obtained from the manufacturer. Cost estimates are provided in Appendix H.

PROJECT SUMMARY

Segments 1 & 2

The proposed design for Segments 1 & 2 does not require off-site treatment SWMF's. Stormwater management requirements will be satisfied using underground retention in a 2.5-foot deep aggregate storage zone under the 10-foot multi-purpose trail with a 2 foot wide gravel drainfield for interception. This provides sufficient storage to meet both NWFWMD and Leon County stormwater management requirements including the special requirements for Bradfordville and Lake Jackson watersheds. As necessary, the required volume will be provided by increasing the storage zone depth to compensate for the trail grades and breaks in the storage segments.

Segment 3

The proposed design for Segment 3 has two typical sections. Both typical sections utilize a rural 4-lane configuration; a raised curbed median and a second a stripped median for the transition at the west end of the segment. A 4.64 acre surface SWMF is required in Basin 3-1. Roadway runoff will be collected from both roadways and piped to the pond site. Treatment in Basin 3-8, consisting of the present Thomasville Road transition, is provided for in the FDOT SWMF #4 requiring only minor modifications to the present storm drain system.

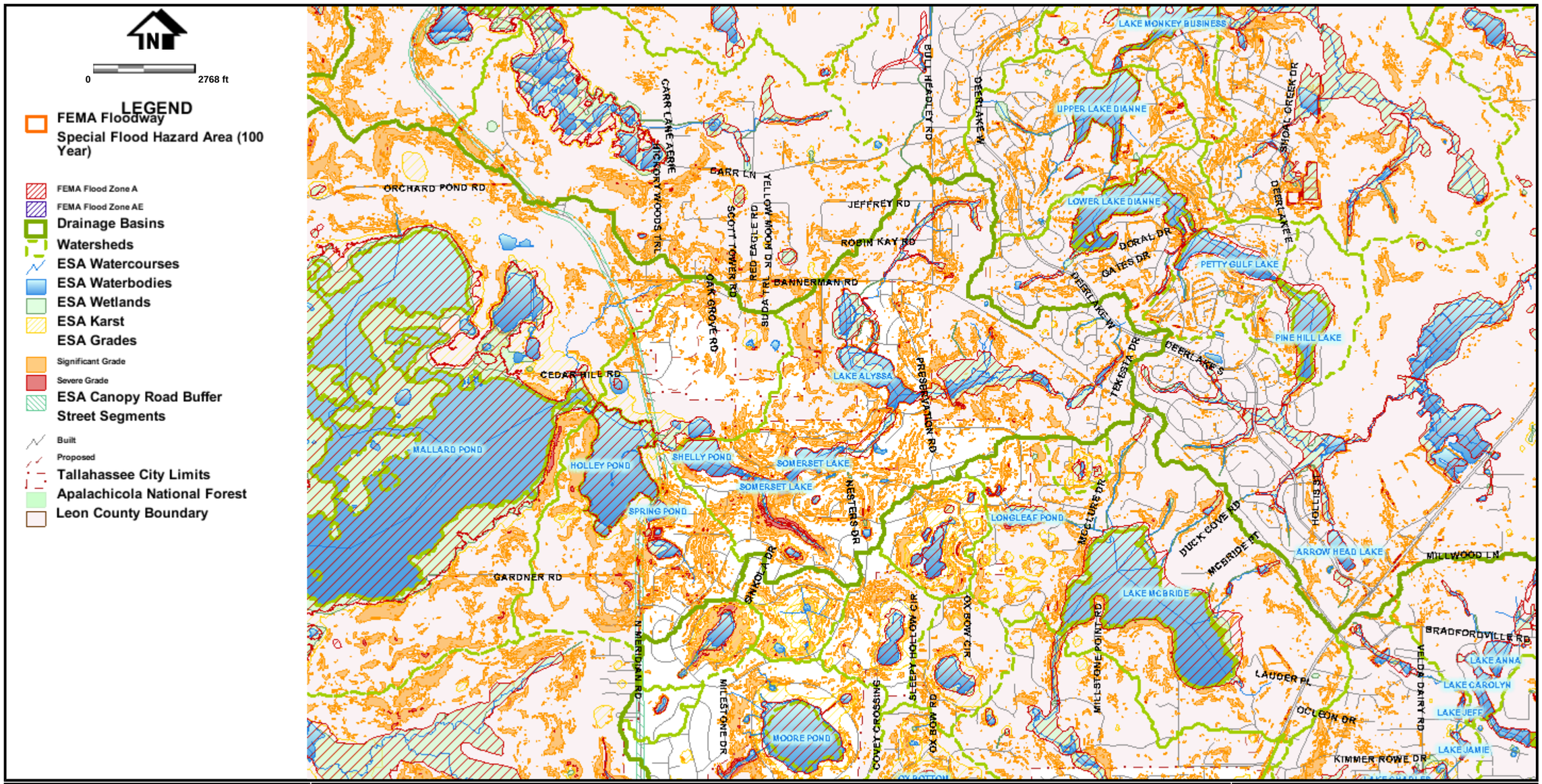
In all the other Segment 3 basins, stormwater management will be provided utilizing roadway ditches for in-line retention and attenuation. Both ditches discharge runoff greater than the treatment volume into the existing natural drainage ways at or below the existing rate. The BSA 4 inch treatment volume requirement controls the stormwater design. Treatment is accomplished using infiltration from the roadway ditches into an underground storage area. Additional underground storage is necessary to meet recovery requirements. The Leon County continuous simulation procedure would be used to determine if additional storage volume is required below the treatment ditch. Preliminary calculations show that the north (westbound) ditch will require a supplement storage system. The additional storage is located under the multi-use trail. The south (eastbound) roadway ditch would provide treatment for the eastbound roadway. In areas where the roadway grade exceeds 1%, additional supplemental storage may be necessary for both roadways. It is anticipated that stormwater chambers such as a

polypropylene corrugated wall chamber will need to be added below the ditch bottom, sufficiently buried to avoid excessive wheel loads.

A proposed drainage outfall improvement is being developed for Basin 3-6 to address existing drainage concerns. The Bannerman Road preliminary design will be adjusted to maintain or decrease the present rate and volume of discharge into Killearn Lakes fully consistent with that project.

Appendix A

Drainage Maps



Tallahassee-Leon County GIS
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Leon County GIS Drainage Basin Map

Bannerman Road Corridor

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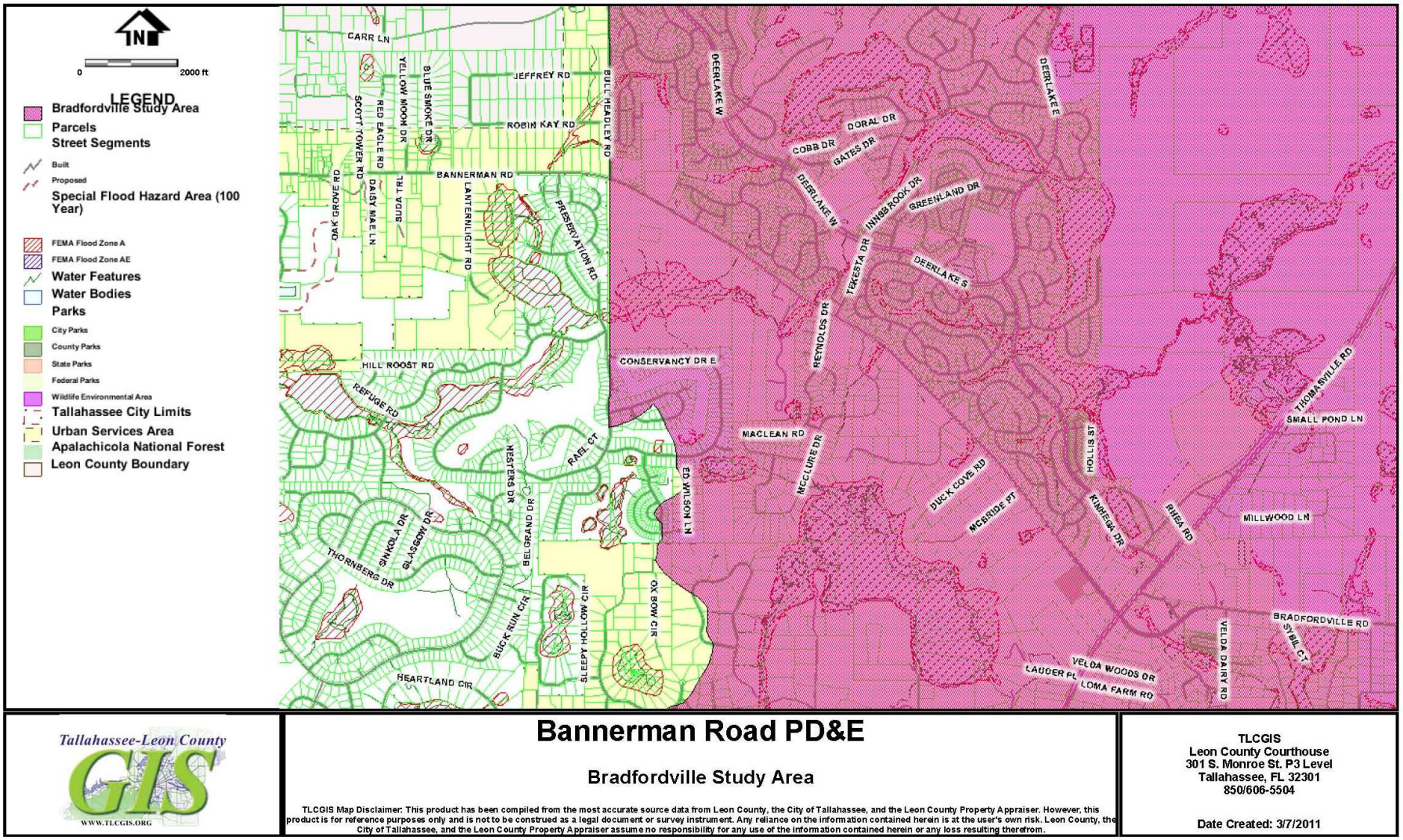
Tallahassee, FL 32301
850/606-5504

Date Created: 6/22/2011



Tallahassee-Leon County GIS
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Bannerman Road PD&E

Bradfordville Study Area

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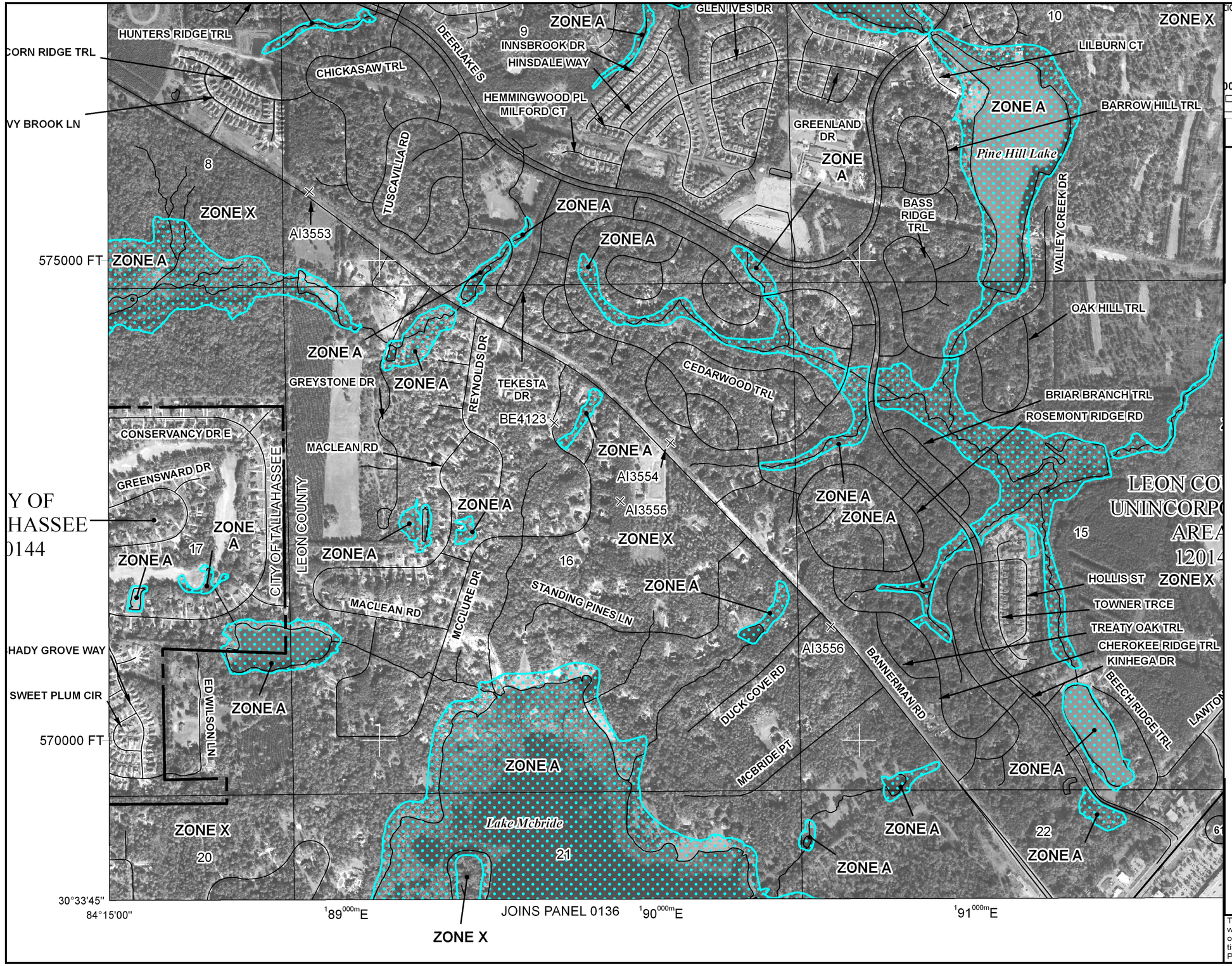
Date Created: 3/7/2011



tional Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

00 0 1000 2000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0130F

FIRM

FLOOD INSURANCE RATE MAP

LEON COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 130 OF 490

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEON COUNTY	120143	0130	F
TALLAHASSEE, CITY OF	120144	0130	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12073C0130F

MAP REVISED
AUGUST 18, 2009

Federal Emergency Management Agency

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tional Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

00 0 1000 2000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110F

FIRM

FLOOD INSURANCE RATE MAP

LEON COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 110 OF 490

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEON COUNTY	120143	0110	F
TALLAHASSEE, CITY OF	120144	0110	F

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MAP NUMBER
12073C0110F

MAP REVISED
AUGUST 18, 2009

Federal Emergency Management Agency

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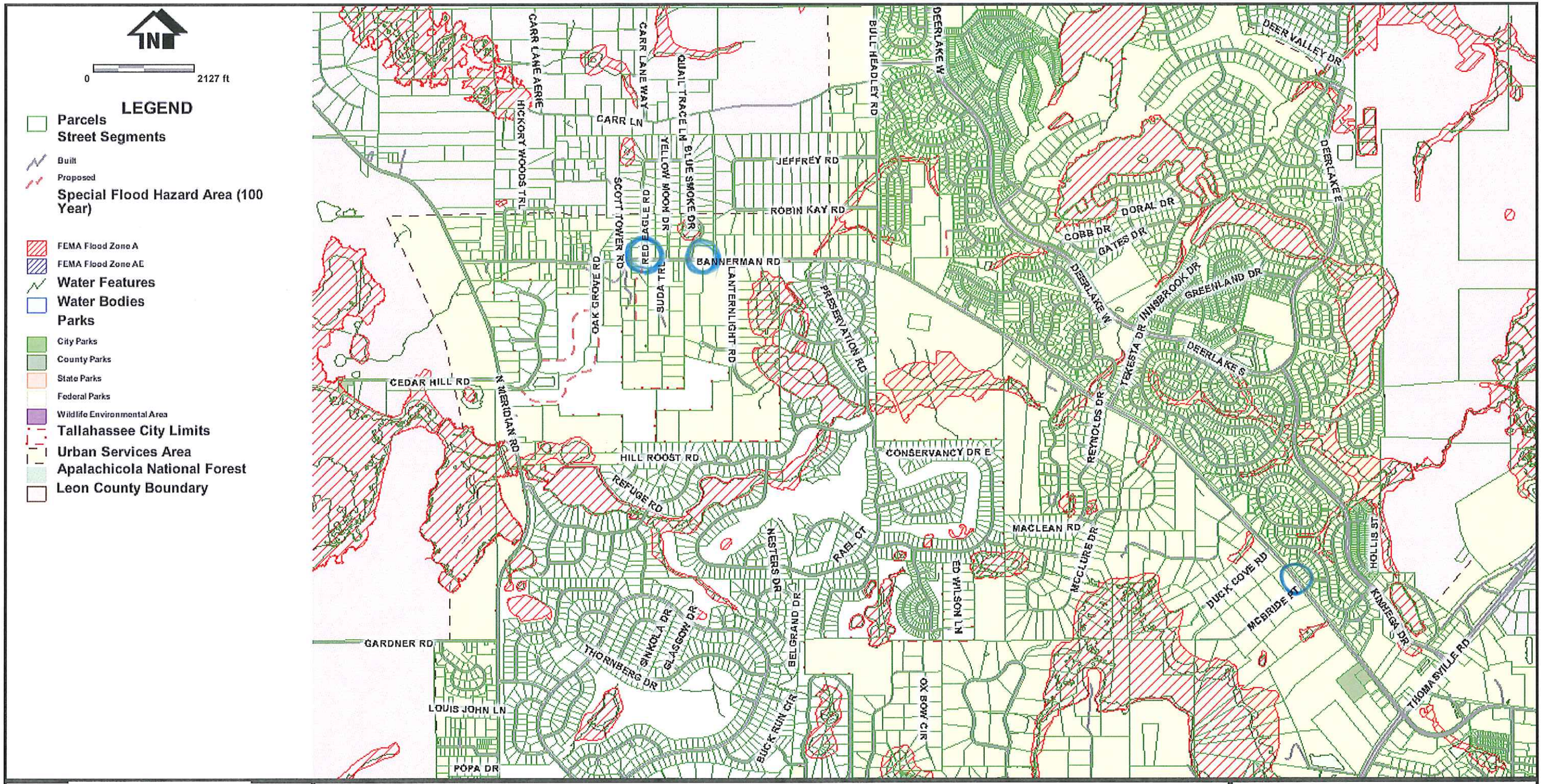

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Bannerman Road Corridor Study

Areas with Known Flooding Issues

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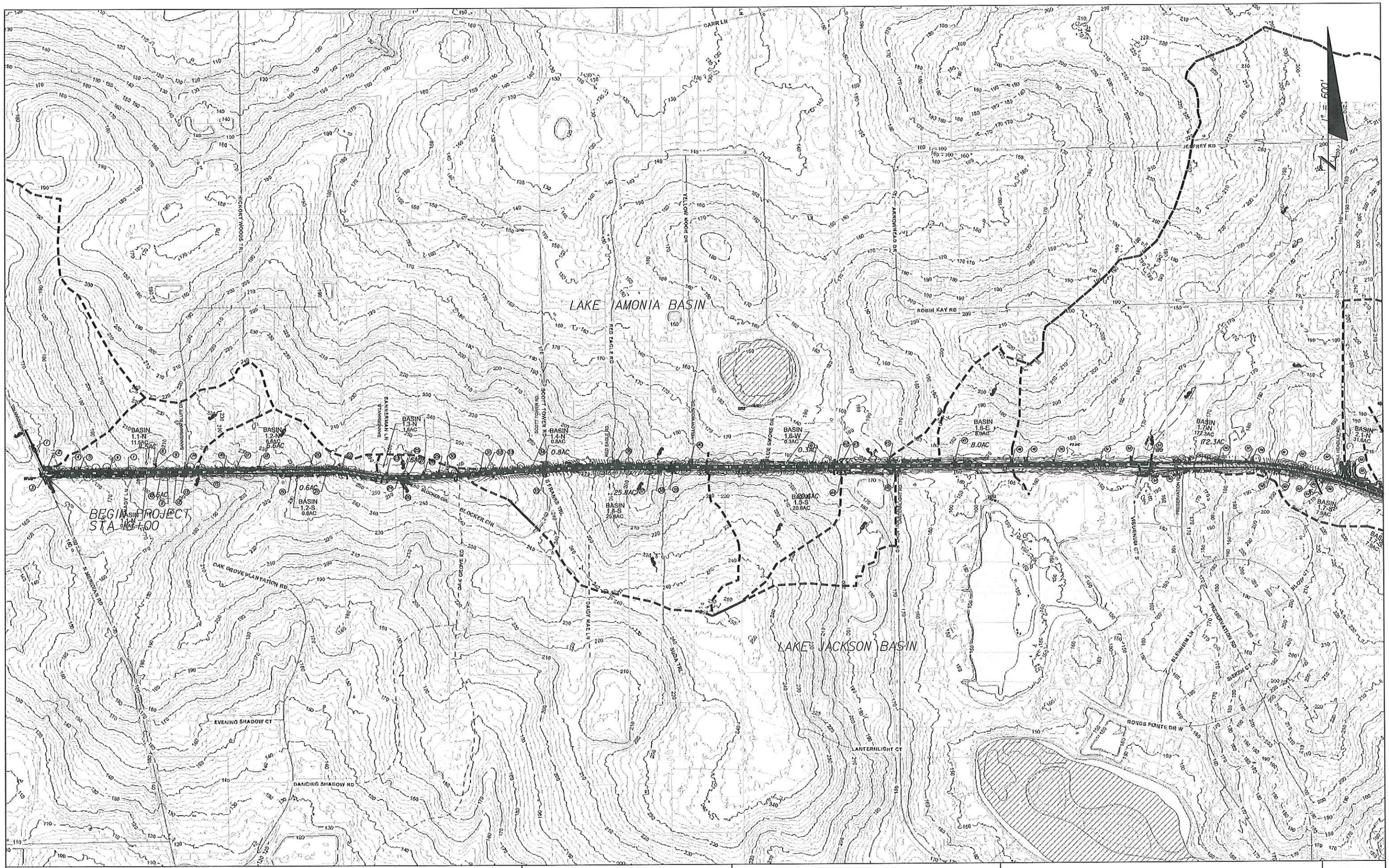
Date Created: 8/9/2011



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

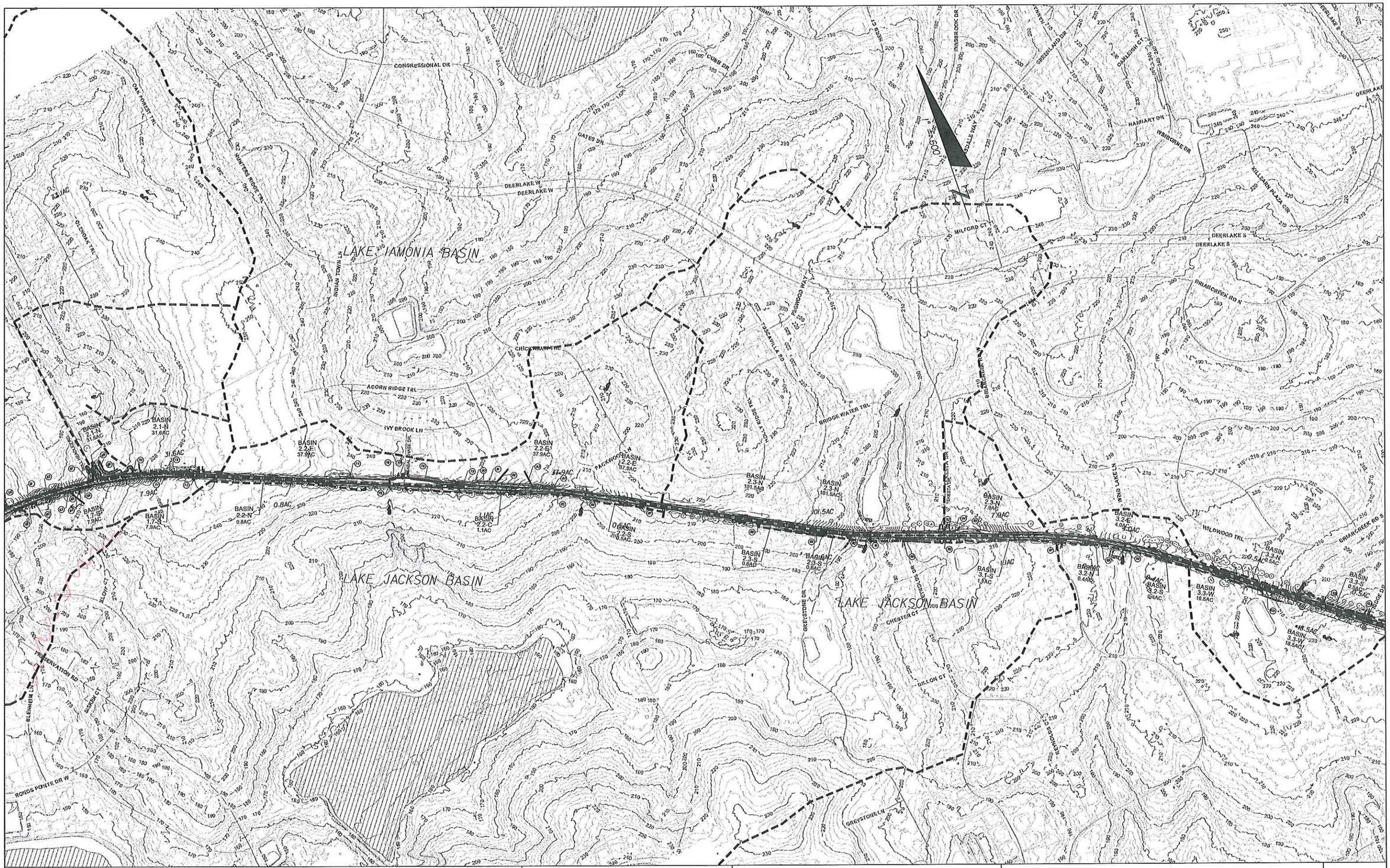
STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		_ _ _

DRAINAGE MAP
BANNERMAN ROAD

SHEET NO.

GEGalott1 8/12/2011 1:09:15 PM Y:\Projects\Bannerman\2 DESIGN\Drainage\Drawings\drmprd20.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		_ _ _

DRAINAGE MAP
BANNERMAN ROAD

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		_ _ _

DRAINAGE MAP
BANNERMAN ROAD

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

(1)
(N) CATCH BASIN
TOP EL.=159.13'
SLOT EL.=154.88'(S)
24" RCP
(S) DRAINAGE MH
TOP EL.=162.65'
INV. EL.=157.88'(N)
INV. EL.=157.88'(E)

(2)
24"RCP
(E) DRAINAGE
STUCRURE
TOP EL.=162.70'
INV. EL.=158.37'(W)

(3)
(W) CATCH BASIN
TOP EL.=162.59'
SLOT EL.=161.58'(W)
INV. EL.=159.27'(E)
18"RCP
(E) DRAINAGE MH
TOP EL.=162.90'
INV. EL.=157.86'(W)
INV. EL.=157.85'(S)
18"RCP

(4)
(W) M.E.S. INV. EL.=167.59'
15"CMP
(E) M.E.S. INV. EL.=168.86'

(5)
(W) INV. EL.=169.26'
15"RCP
(E) INV. EL.=169.26'

(6)
(W) HEADWALL
TOP EL.=181.16'(S)
TOP EL.=182.16'(N)
INV. EL.=176.89'
18"RCP
(E) HEADWALL
TOP EL.=182.55'(S)
TOP EL.=183.55'(N)
INV. EL.=178.41'

(7)
HEADWALL (BROKEN)
TOP EL.=187.34'(S)
TOP EL.=186.76'(N)
INV. EL.=185.26'
18"CMP
HEADWALL
TOP EL.=187.57'
INV. EL.=185.38'

(8)
(NW) INV. EL.=198.39'
18"CMP
(E) DRAINAGE MH
TOP EL.=202.74'
TOP WALL EL.=200.53'
INV. EL.=195.81'(S)
INV. EL.=198.86'(NW)

(9)
15"CMP
(SW) INV. EL.=195.44'

(10)
(W) M.E.S. INV. EL.=196.06'
18"CMP
(E) M.E.S. INV. EL.=197.07'

(11)
(W) INV. EL.=198.17'
18"CMP
(E) INV. EL.=198.90'

(12)
(W) HEADWALL
TOP EL.=201.49'
INV. EL.=199.78'
18"RCP
(E) HEADWALL
TOP EL.=202.11'
INV. EL.=200.31'

(13)
(W) INV. EL.=202.12'
18"CMP
(E) INV. EL.=203.03'

(14)
(W) HEADWALL
M.E.S.
INV. EL.=201.28'
24"RCP
(E) HEADWALL
M.E.S.
INV. EL.=203.13'

(15)
(SW) INV. EL.=203.03'
18"RCP
(NE) INV. EL.=203.03'

(16)
(W) HEADWALL
TOP EL.=211.28'
INV. EL.=208.85'
18"CMP
(E) HEADWALL
TOP EL.=211.61'
INV. EL.=209.57'

(17)
(W) INV. EL.=210.88'
18"CMP
(E) INV. EL.=211.65'

(18)
(W) M.E.S. INV. EL.=217.08'
15"CMP
(E) M.E.S. INV. EL.=217.49'

(19)
(W) INV. EL.=223.30'
18"CMP
(E) INV. EL.=224.52'

(20)
(W) INV. EL.=233.43'
18"CMP
(E) INV. EL.=234.20'

(21)
(W) INV. EL.=238.30'
18"RCP
(E) INV. EL.=240.09'

(22)
(W) INV. EL.=245.10'
18"CMP
(E) INV. EL.=246.16'

(23)
(W) M.E.S. INV. EL.=254.51'
15"CMP
(E) M.E.S. INV. EL.=254.18'

(24)
(NW) INV. EL.=251.86'
18"RCP
(SE) INV. EL.=250.65'

(25)
(W) M.E.S. INV. EL.=253.38'
15"CMP
(E) M.E.S. INV. EL.=253.39'

(26)
(NW) HEADWALL
TOP EL.=253.04'
INV. EL.=250.96'
18"CMP
(SE) HEADWALL
TOP EL.=252.21'
INV. EL.=249.92'

(27)
(W) M.E.S. INV. EL.=253.35'
18"CMP
(E) M.E.S. INV. EL.=253.26'

(28)
(W) M.E.S. INV. EL.=253.49'
18"CMP
(E) M.E.S. INV. EL.=253.97'

(29)
(W) INV. EL.=254.63'
18"CMP
(E) INV. EL.=254.79'

(30)
(W) INV. EL.=255.62'
15"CMP
(E) INV. EL.=255.69'

(31)
11"x16"CMP(DAMAGED)
(W) INV. EL.=254.87'
12"CMP
(E) INV. EL.=254.77'

(32)
(W)HEADWALL
TOP EL.=254.94'
INV. EL.=253.33'
14"X21"CMP
(E) INV. EL.=252.10'

(33)
(W) INV. EL.=248.45'
15"CMP
(E) INV. EL.=247.81'

(34)
(W) HEADWALL
TOP EL.=233.35'
INV. EL.=230.92'
24"CMP
(E) INV. EL.=230.29'

(35)
(W) HEADWALL
TOP EL.=234.56'
INV. EL.=232.44'
24"CMP
(E) HEADWALL
TOP EL.=232.91'
INV. EL.=230.47'

(36)
(W) INV. EL.=204.47'
18"CMP
(E) INV. EL.=201.74'

(37)
(N) INV. EL.=186.11'
30" RCP
(S) INV. EL.=186.36'

(38)
(W) HEADWALL
TOP EL.=192.75'
INV. EL.=189.24'
18"CMP
(E) HEADWALL
TOP EL.=192.21'
INV. EL.=189.83'

(39)
(W) HEADWALL
TOP EL.=193.34'
INV. EL.=191.68'
18"CMP
(E) HEADWALL
TOP EL.=193.81'
INV. EL.=192.22'

(40)
(W) HEADWALL
TOP EL.=193.94'
INV. EL.=192.30'
18"CMP
(E) COMPLETELY
COVERED
NOT IN USE

(41)
(W) HEADWALL
TOP EL.=179.23'
INV. EL.=177.60'
15"CMP
(E) HEADWALL
TOP EL.=178.42'
INV. EL.=176.56'

(42)
(W) INV. EL.=168.18'
15"CMP
(E) INV. EL.=167.67'

(43)
(W) INV. EL.=167.44'
15"CMP
(E) COMPLETELY COVERED
NOT IN USE

(44)
(W) CATCH BASIN
TOP EL.=170.11'
INV. EL.=167.38'(E)
(W) CONCRETE
FLUME
24"RCP
(E) M.E.S.
INV. EL.=165.41'

(45)
(W) HEADWALL
TOP EL.=162.22'
INV. EL.=160.19'
18"RCP
(E) HEADWALL
TOP EL.=162.27'
INV. EL.=159.87'

(46)
(W) CONCRETE FLUME
(W) M.E.S. INV. EL.=158.44'
(W) M.E.S. INV. EL.=158.40'
2 - 24"RCP
(E) FLUME
(E) M.E.S. INV. EL.=158.14'
(E) M.E.S. INV. EL.=158.03'

(47)
(W) HEADWALL
TOP EL.=164.05'
INV. EL.=161.75'
18"RCP
(E) HEADWALL
TOP EL.=163.73'
INV. EL.=161.91'

(48)
FRENCH DRAIN
TOP EL.=166.85'
INV. EL.=165.50'(E)
INV. EL.=165.67'(W)

(49)
(W) HEADWALL
TOP EL.=166.16'
INV. EL.=164.09'
18"RCP
(E) HEADWALL
TOP EL.=165.75'
INV. EL.=163.72'

(50)
(W) HEADWALL
TOP EL.=165.51'
INV. EL.=162.96'
18"RCP
(E) HEADWALL
TOP EL.=165.23'
INV. EL.=162.82'

(51)
(W) INV. EL.=162.80'
18"RCP
(E) INV. EL.=162.55'

(52)
(W) HEADWALL
TOP EL.=164.28'
INV. EL.=162.01'
18"CMP (FLATTENED)
(E) HEADWALL
TOP EL.=164.23'
INV. EL.=162.01'

(53)
(N) INV. EL.=161.69'
(N) INV. EL.=160.60'
2 - 15"HDPE
(S) INV. EL.=159.65'
(S) INV. EL.=160.24'

(54)
(N) M.E.S. INV. EL.=159.47'
(N) M.E.S. INV. EL.=159.69'
2 - 30"RCP
(S) M.E.S. INV. EL.=157.66'
(S) M.E.S. INV. EL.=157.68'
(S) CONCRETE FLUME

(55)
(W) M.E.S. INV. EL.=159.22'
30"RCP
(E) CATCH BASIN
TOP EL.=166.80'
SLOT EL.=165.87'(E)
INV. EL.=161.33'(W)

(56)
(W) INV. EL.=173.58'
18"RCP
(E) HEADWALL
TOP EL.=176.83'
INV. EL.=174.13'

(57)
(W) HEADWALL
TOP EL.=184.75'
INV. EL.=182.44'
18"RCP
(E) HEADWALL
TOP EL.=185.33'
INV. EL.=182.87'

(58)
(W) HEADWALL
TOP EL.=185.63'
INV. EL.=183.36'
18"RCP
(E) HEADWALL
TOP EL.=186.22'
INV. EL.=183.93'

(59)
(W) RIP-RAP
(W) CONCRETE FLUME
(W) INV. EL.=185.14'
18"RCP
(E) CATCH BASIN
SLOT EL.=191.73'(E)
TOP EL.=192.23'
INV. EL.=186.43'(W)
INV. EL.=186.59'(S)
18"RCP

(60)
18"RCP
(S) RETAINING WALL

(61)
(W) HEADWALL
TOP EL.=191.82'
INV. EL.=189.31'
18"RCP
(E) HEADWALL
TOP EL.=193.16'
INV. EL.=190.79'

(62)
(W) HEADWALL
TOP EL.=198.45'
INV. EL.=195.66'
18"RCP
(E) HEADWALL
TOP EL.=199.66'
INV. EL.=196.74'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		- - -

DRAINAGE STRUCTURE DATA
BANNERMAN ROAD

SHEET NO.

(63)
(W) M.E.S. INV. EL.=202.72'
18"RCP
(E) CATCH BASIN
SLOT EL.=206.08'(E)
TOP EL.=206.52'
INV. EL.=202.90'(E)
INV. EL.=202.97'(W)
INV. EL.=203.07'(S)

(64)
18"RCP
(SE) CATCH BASIN
TOP EL.=211.24'
SLOT EL.=210.68'(SW)
SLOT EL.=210.76'(NE)
INV. EL.=204.81'(NW)

(65)
18"RCP
(E) CATCH BASIN
TOP EL.=208.58'
SLOT EL.=208.09'(E)
INV. EL.=204.30'(E)
INV. EL.=204.12'(W)

(66)
18"RCP
(E) CATCH BASIN
TOP EL.=209.39'
SLOT EL.=208.86'(E)
INV. EL.=205.61'(W)

(67)
(W) INV. EL.=209.75'
18"RCP
(E) COMPLETELY COVERED
NOT IN USE

(68)
(NW) M.E.S. INV. EL.=212.59'
18"RCP
(S) DRAINAGE MH
TOP EL.=216.79'
INV. EL.=212.92'(NW)
INV. EL.=212.76'(E)

(69)
18"RCP
(E) DRAINAGE MH
TOP EL.=224.05'
INV. EL.=218.32'(W)
INV. EL.=220.72'(E)

(70)
18"RCP
(E) M.E.S. INV. EL.=227.47'

(71)
(NW) INV. EL.=235.35'
15"CMP
(SE) INV. EL.=235.86'

(72)
(NW) INV. EL.=235.98'
18"CMP
(SE) INV. EL.=236.83'

(73)
(NW) INV. EL.=242.81'
15"CMP
(SE) INV. EL.=243.16'

(74)
(NW) M.E.S. INV. EL.=231.02'
18"RCP
(SE) M.E.S. INV. EL.=230.69'

(75)
(W) M.E.S. INV. EL.=228.48'
18"x30"RCP
(NW) CATCH BASIN
TOP EL.=231.36'
INV. EL.=228.74'(S)
INV. EL.=227.61'(E)

(76)
18"RCP
(SE) CURB INLET
TOP GRATE EL.=231.09'
INV. EL.=225.89'(W)
INV. EL.=225.85'(SE)

(77)
24"RCP
(SE) CURB INLET
TOP GRATE EL.=231.45'
INV. EL.=225.39'(SE)
INV. EL.=225.52'(NW)

(78)
18"RCP
(SE) CATCH BASIN
TOP EL.=229.49'
INV. EL.=224.53'(NW)
INV. EL.=224.47'(SE)

(79)
24"RCP
(SE) DRAINAGE MH
TOP EL.=227.40'
INV. EL.=223.53'(W)
INV. EL.=223.54'(E)

(80)
24"RCP
(SE) DRAINAGE MH
TOP EL.=229.32'
INV. EL.=222.95'(W)
INV. EL.=222.96'(E)

(81)
24"RCP
(SE) DRAINAGE MH
TOP EL.=225.92'
INV. EL.=222.44'(NW)
INV. EL.=222.32'(NE)

(82)
24"RCP
(E) M.E.S. INV. EL.=220.98'
(E) FLUME

(83)
(E) OUTFALL STRUCTURE
TOP EL.=224.74'
SLOT EL. TOP=223.91'(N)
SLOT EL. BOTTOM=222.16'(N)
SLOT EL.=223.84'(E)
SLOT EL.=223.85'(S)
SLOT EL.=223.90'(W)
INV. EL.=216.82'(S)
18"RCP
(W) INV. EL.=214.21'

(84)
(NW) INV. EL.=211.21'
18"RCP
(SE) INV. EL.=210.80'

(85)
(NW) INV. EL.=209.17'
18"RCP
(SE) INV. EL.=209.06'

(86)
CROSS DRAIN
(N) HEADWALL INV. EL.=204.94'
36"X 24" RCP
(S) HEADWALL INV. EL.=203.93'

(87)
(NW) M.E.S. INV. EL.=212.41'
18"RCP
(SE) M.E.S INV. EL.=212.83'

(88)
(NW) HEADWALL INV. EL.=207.20'
18"CMP
(SE) CMP INV. EL.=207.95'

(89)
(NW) M.E.S. INV. EL.=200.12'
18"RCP
(SE) M.E.S INV. EL.=196.38'

(90)
(NW) M.E.S. INV. EL.=191.89'
18"RCP
(SE) M.E.S INV. EL.=191.70'

(91)
CROSS DRAIN
(N) HEADWALL INV. EL.=204.94'
30" CMP
(S) HEADWALL INV. EL.=203.93'

(92)
(NW) M.E.S. INV. EL.=192.07'
18"RCP
(SE) M.E.S INV. EL.=194.01'

(93)
(NW) M.E.S. INV. EL.=202.43'
18"RCP

(94)
CATCH BASIN
TOP EL.=205.10'
INV. EL.=201.42'(E)
INV. EL.=201.48'(NW)
18"RCP

(95)
CATCH BASIN
TOP EL.=205.30'
INV. EL.=202.43'(NE)
INV. EL.=202.39'(W)
15"RCP

(96)
(NW) M.E.S. INV. EL.=199.43'
18"RCP
(SE) M.E.S INV. EL.=201.43'

(97)
(NW) M.E.S. INV. EL.=217.50'
18"RCP
(SE) M.E.S INV. EL.=218.20'

(98)
(NW) M.E.S. INV. EL.=216.08'
18"RCP
(SE) M.E.S INV. EL.=215.82'

(99)
CROSS DRAIN
(NE) HEADWALL INV. EL.=212.92'
18" CMP
(SW) ENDWALL INV. EL.=214.92'

(100)
(NW) M.E.S. INV. EL.=213.07'
15"RCP
(SE) M.E.S INV. EL.=209.28'

(101)
CROSS DRAIN
(NE) HEADWALL INV. EL.=201.95'
30" CMP
(SW) ENDWALL INV. EL.=203.14'

(102)
(NW) M.E.S. INV. EL.=207.03'
15"RCP
(SE) M.E.S INV. EL.=207.58'

(103)
(NW) M.E.S. INV. EL.=217.60'
18"CMP
(SE) M.E.S INV. EL.=218.33'

(104)
(NW) M.E.S. INV. EL.=221.27'
24"CMP
(SE) M.E.S INV. EL.=220.64'

(105)
(NW) 18" CMP. INV. EL.=216.77'
(SE) 18" CMP INV. EL.=216.49'

(106)
(NW) HEADWALL 18" CMP
INV. EL.=212.59'
(SE) 18" CMP INV. EL.=212.34'

(107)
(NW) M.E.S. INV. EL.=211.79'
15" RCP
(SE) M.E.S INV. EL.=211.60'

(108)
CROSS DRAIN
(N) HEADWALL INV. EL.=209.90'
18" RCP
(S) ENDWALL INV. EL.=209.41'

(109)
(N) HEADWALL INV. EL.=210.47'
12" CMP
(S) ENDWALL INV. EL.=210.82'

(110)
(NW) 18" CMP. INV. EL.=210.75'
18" CMP
(SE) 18" CMP INV. EL.=211.33'

(111)
(NW) M.E.S. INV. EL.=215.55'
12"CMP
(SE) M.E.S INV. EL.=216.15'

(112)
(NW) 18" CMP. INV. EL.=222.70'
15" RCP
(SE) 18" CMP INV. EL.=222.66'

(113)
(NE) HEADWALL INV. EL.=222.70'
18" CMP
(SW) HEADWALL INV. EL.=216.15'

(114)
CROSS DRAIN
(NE) HEADWALL INV. EL.=201.95'
15" RCP
(SW) INV. EL.=215.65'

(115)
6" PVC
(SW) INV. EL.=220.94'

(116)
(NE) HEADWALL INV. EL.=221.04'
24" CMP
(SW) HEADWALL INV. EL.=222.41'

(117)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=232.65'
FLOW LINE EL.=231.91'
18" RCP
INV. EL.=227.82'(NE)

(118)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=232.86'
FLOW LINE EL.=232.13'
18" RCP
INV. EL.=227.54'(SE)
INV. EL.=227.71'(SW)

(119)
CURB INLET W/
TOP GRATE EL.=227.73'
FLOW LINE EL.=227.47'
18" RCP
INV. EL.=223.55'(NE)

(120)
CURN INLET W/
DRAINAGE MH
TOP MH EL.=228.60'
FLOW LINE EL.=227.75'
18" RCP
INV. EL.=223.10'(NW)
INV. EL.=223.21'(SW)
INV. EL.=223.02'(SE)

(121)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=232.22'
FLOW LINE EL.=231.41'
18" RCP
INV. EL.=223.68'(NE)

(122)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=232.15'
FLOW LINE EL.=231.20'
18" RCP
INV. EL.=222.20'(SE)
INV. EL.=223.02'(SW)
INV. EL.=222.32'(NW)

(123)
DRAINAGE MH
TOP EL.=235.34'
18" RCP
INV. EL.=221.34'(NW)
INV. EL.=221.40'(SE)

(124)
DRAINAGE MH
TOP MH EL.=230.61'
18" RCP
INV. EL.=225.23'(SE)

(125)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=228.35'
FLOW LINE EL.=227.37'
18" RCP
INV. EL.=222.28'(NE)

(126)
18" RCP CONNECTION
PIPES CONNECT
SOMEWHERE
UNDERGROUND

(127)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=224.54'
FLOW LINE EL.=223.89'
18" & 24" RCP
INV. EL.=217.57'(NW)
INV. EL.=217.62'(SW)

(128)
CURB INLET W/
DRAINAGE MH
TOP MH EL.=223.51'
FLOW LINE EL.=222.45'
24" RCP
INV. EL.=216.84'(NE)
INV. EL.=216.80'(SE)

(129)
DRAINAGE MH
TOP EL.=223.39'
24" RCP
INV. EL.=216.00'(NW)
INV. EL.=215.99'(SW)

(130)
DRAINAGE MH
TOP EL.=220.77'
24" RCP
INV. EL.=215.27'(NE)

REVISIONS

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STATE OF FLORIDA
LEON COUNTY

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DRAINAGE STRUCTURE DATA
BANNERMAN ROAD

SHEET NO.

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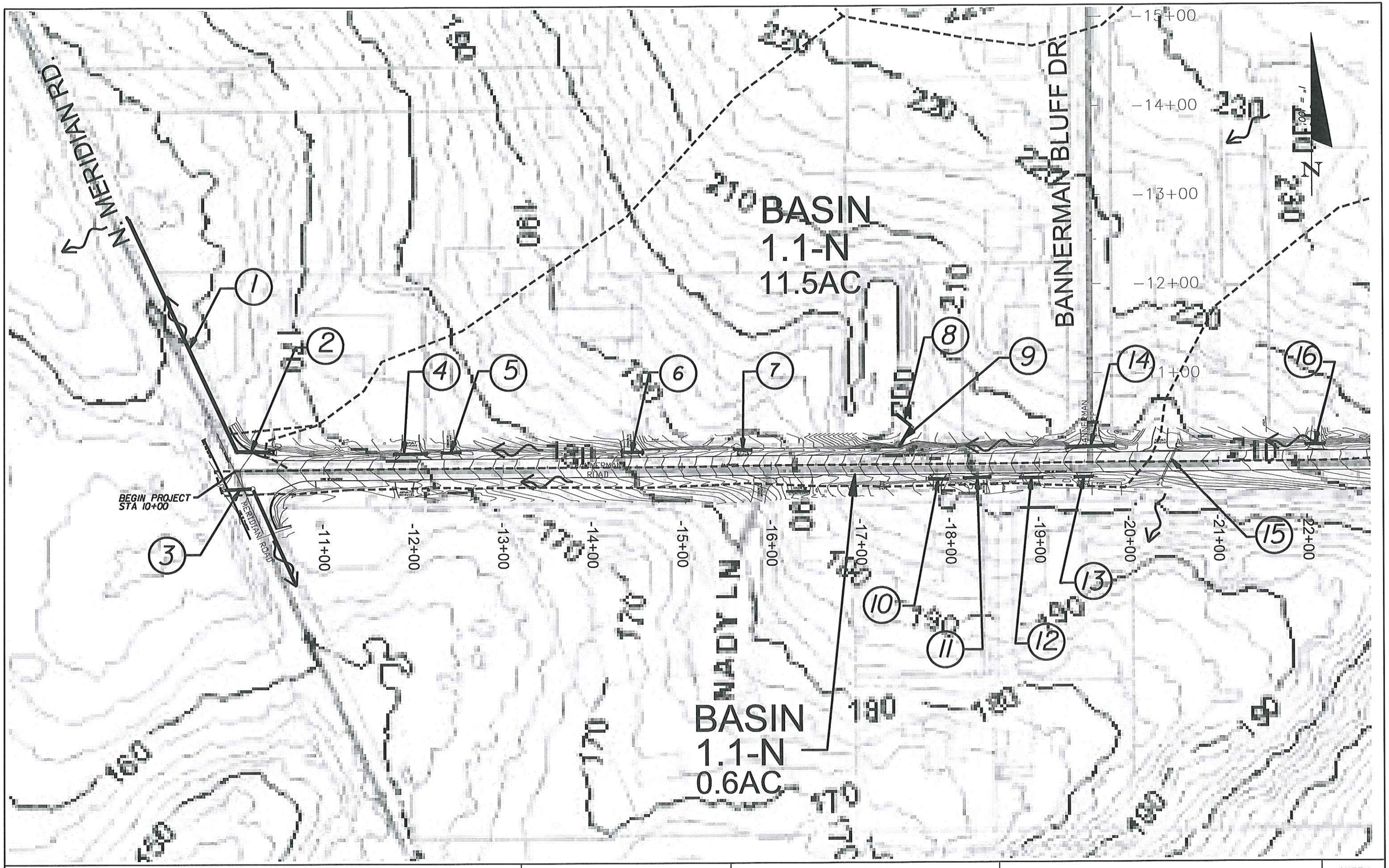

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STATE OF FLORIDA
LEON COUNTY

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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 1

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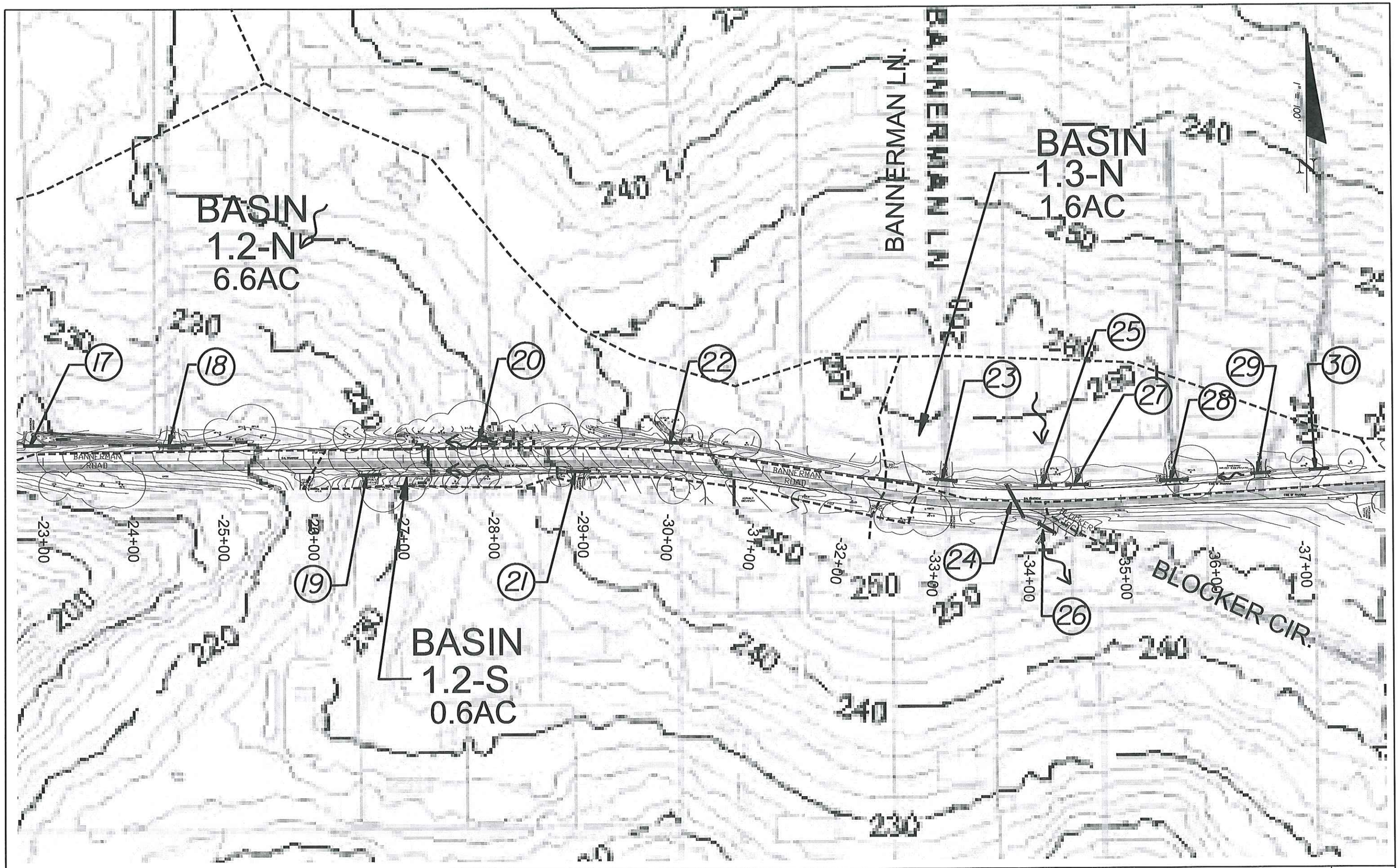

REVISIONS					STATE OF FLORIDA LEON COUNTY			EXISTING DRAINAGE MAP BANNERMAN ROAD	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		2
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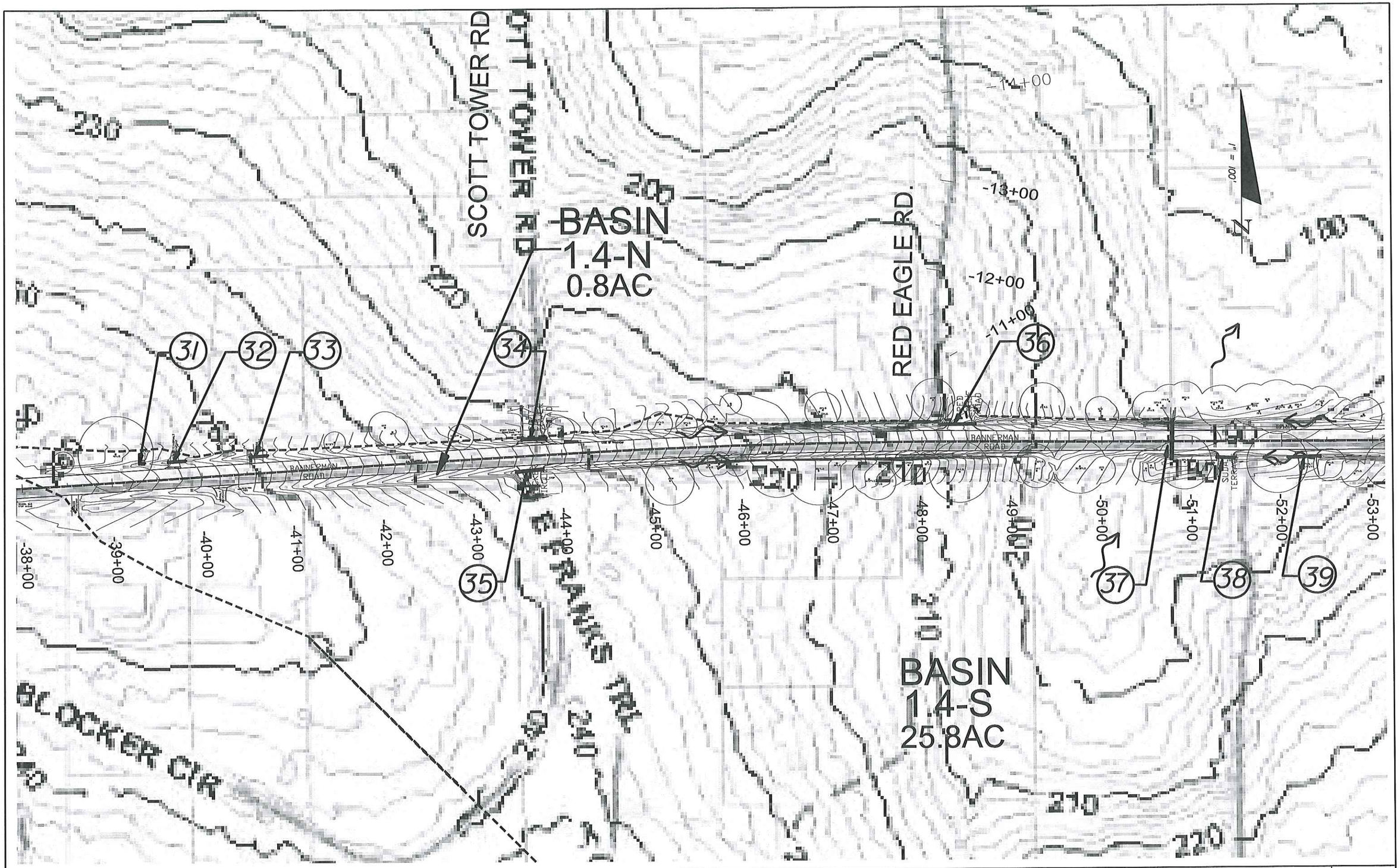

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 3

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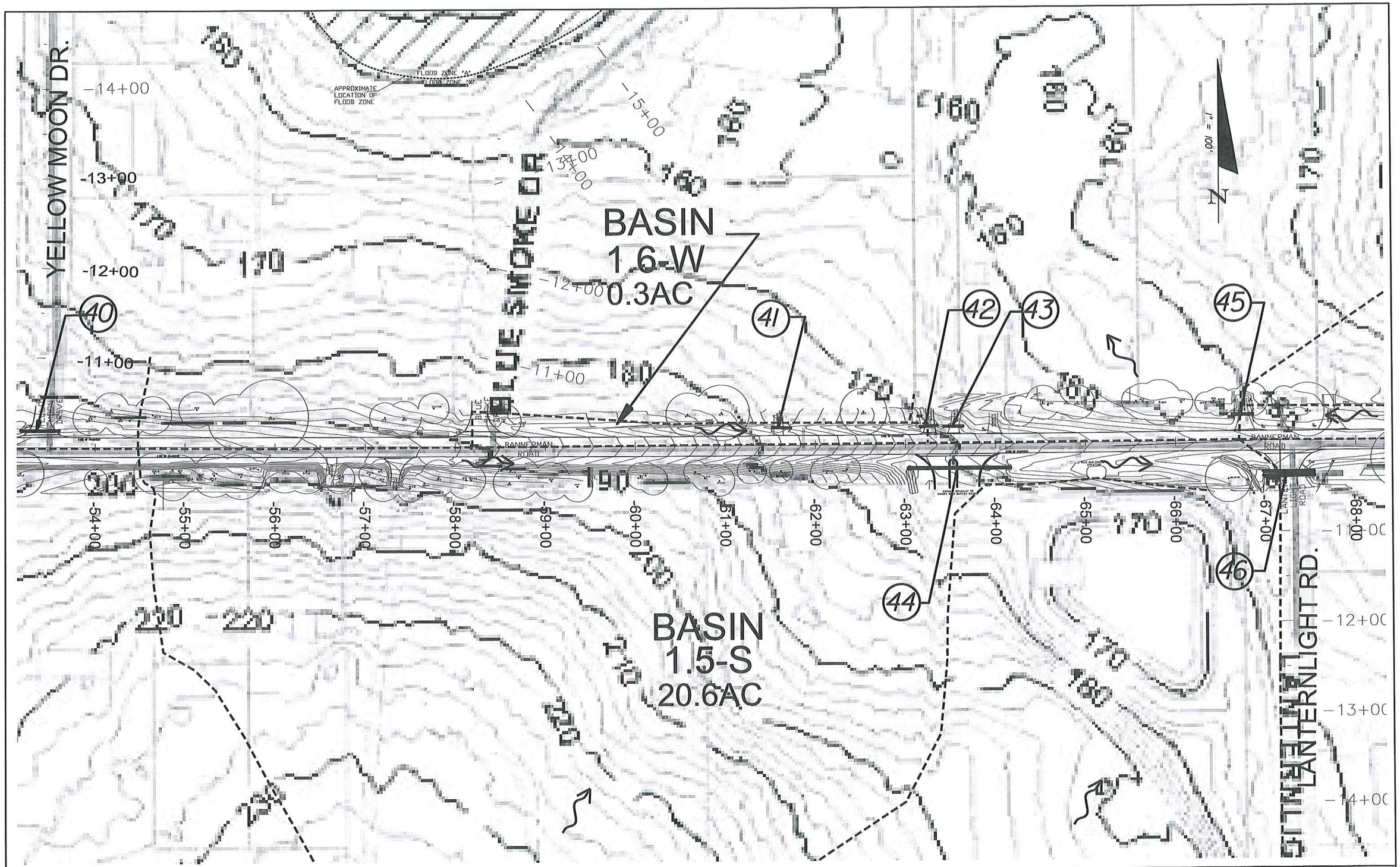

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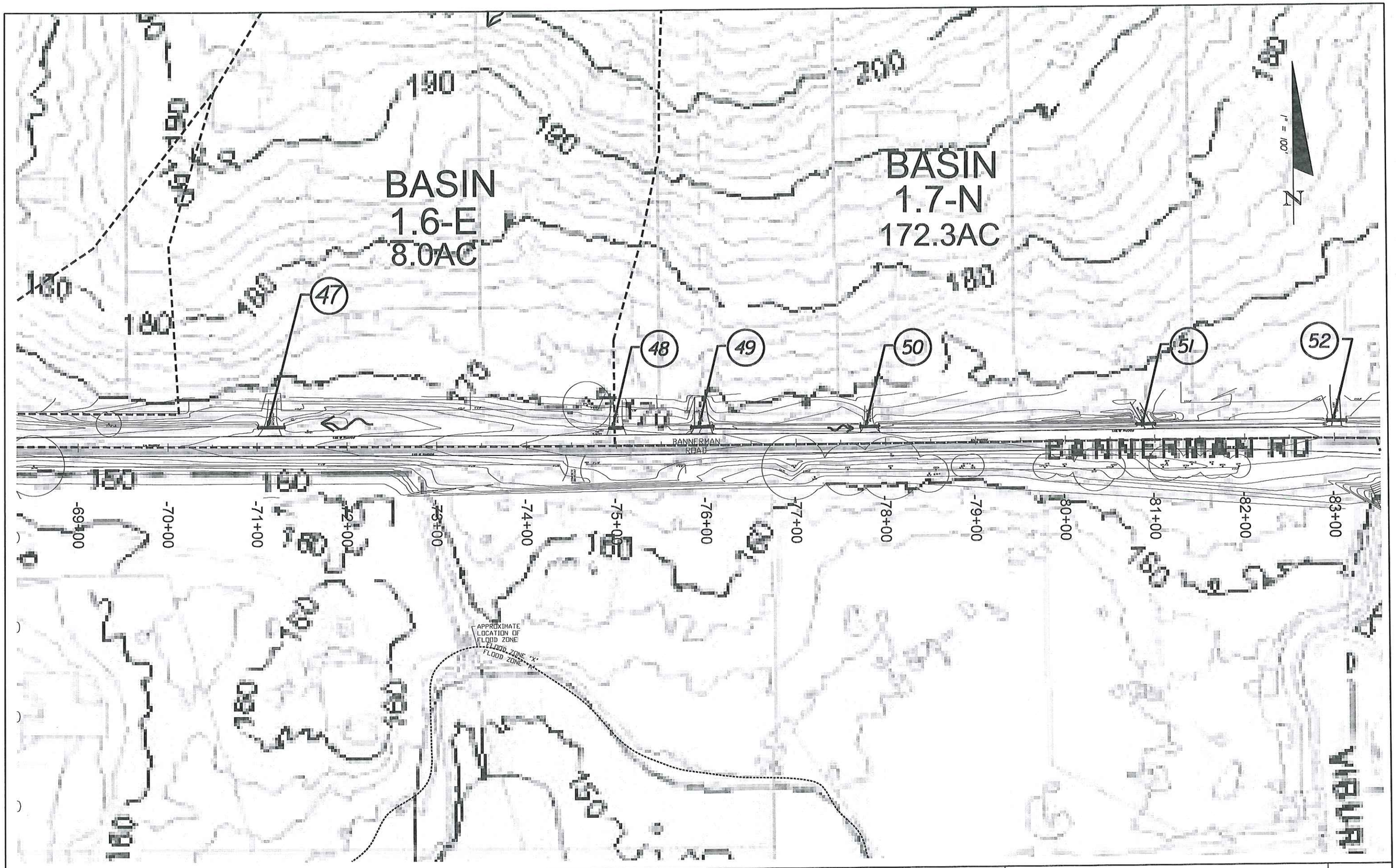

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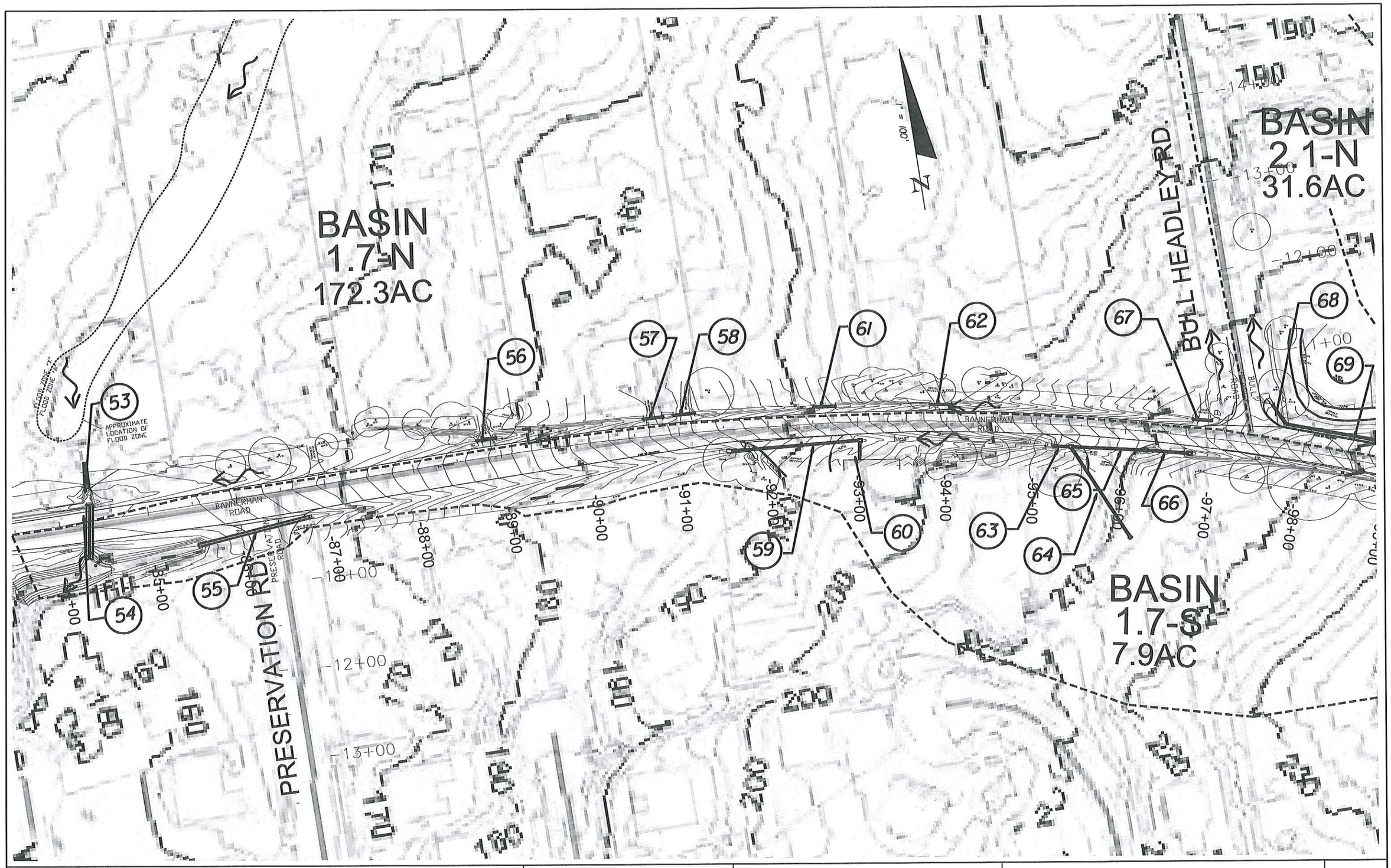

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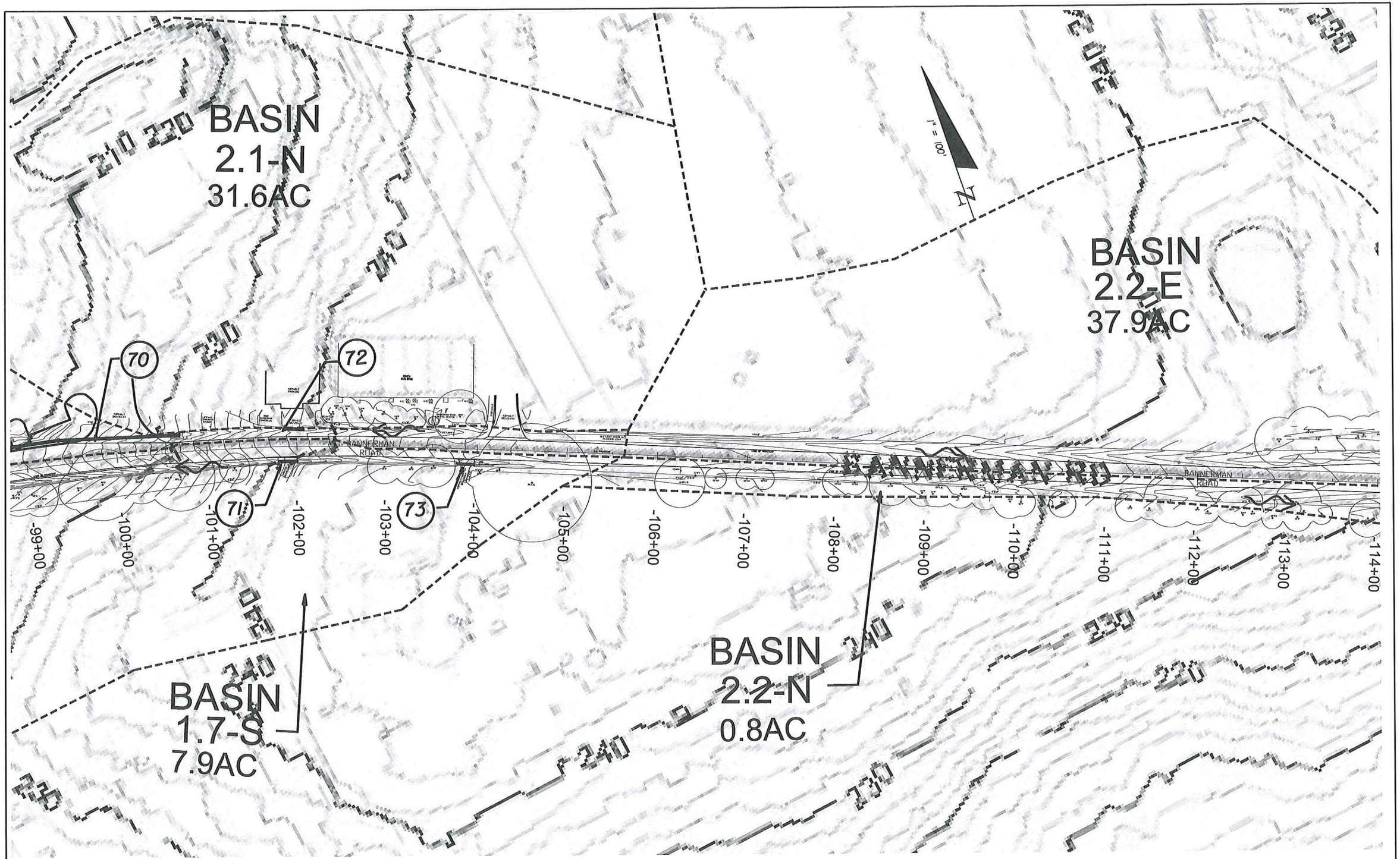

REVISIONS			
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STATE OF FLORIDA
LEON COUNTY

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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 7

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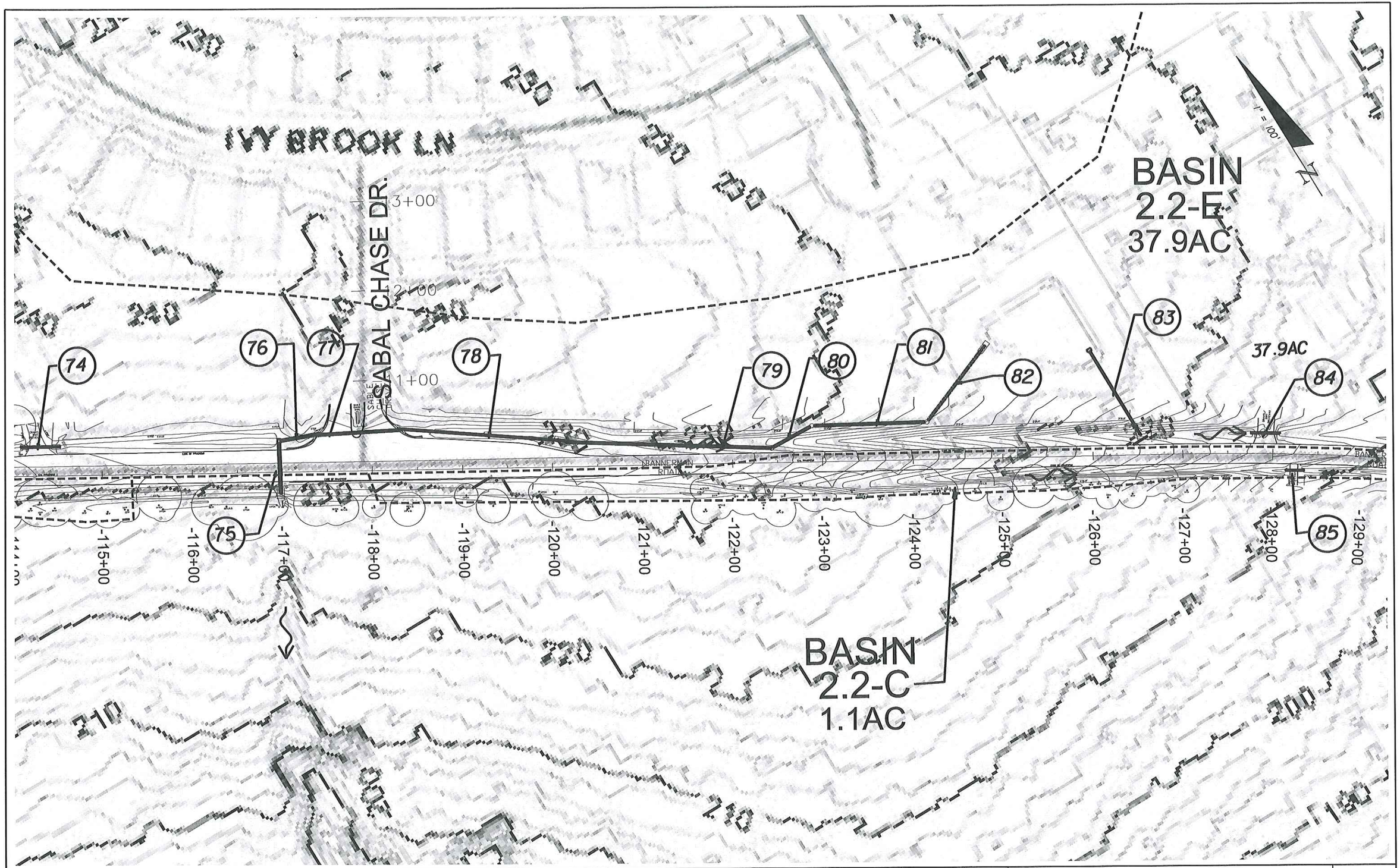

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STATE OF FLORIDA
LEON COUNTY

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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 8

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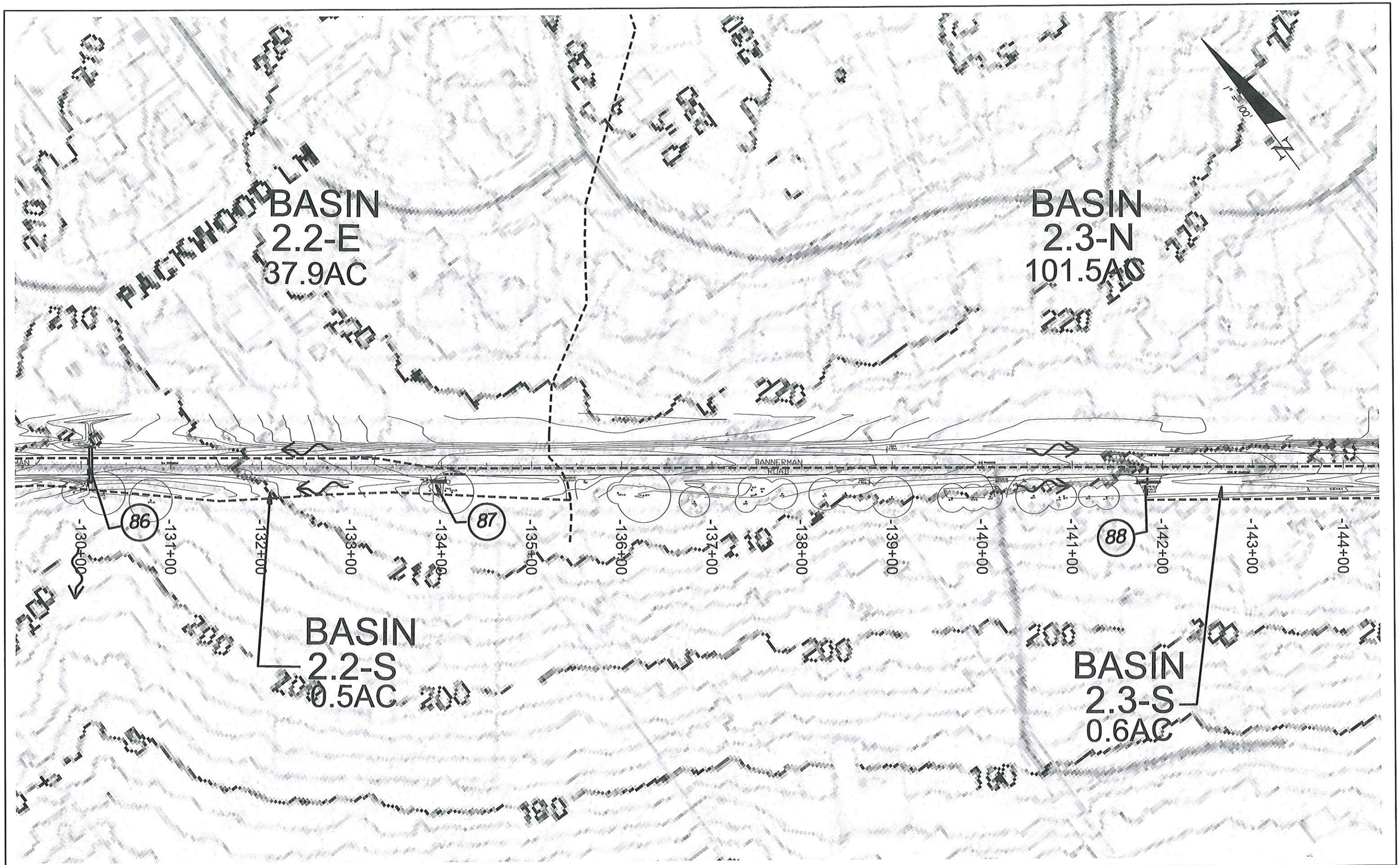

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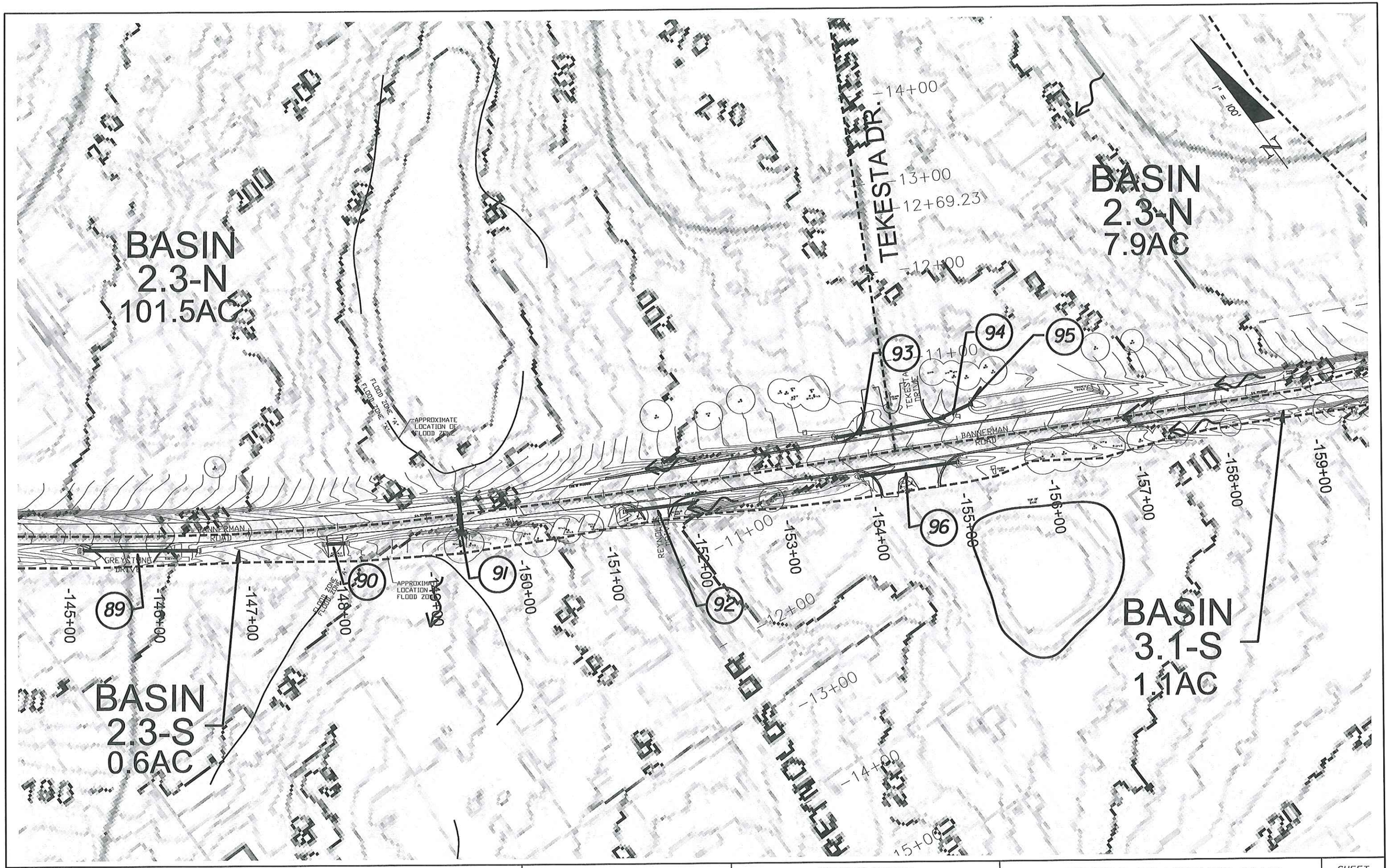

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LEON COUNTY

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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 10

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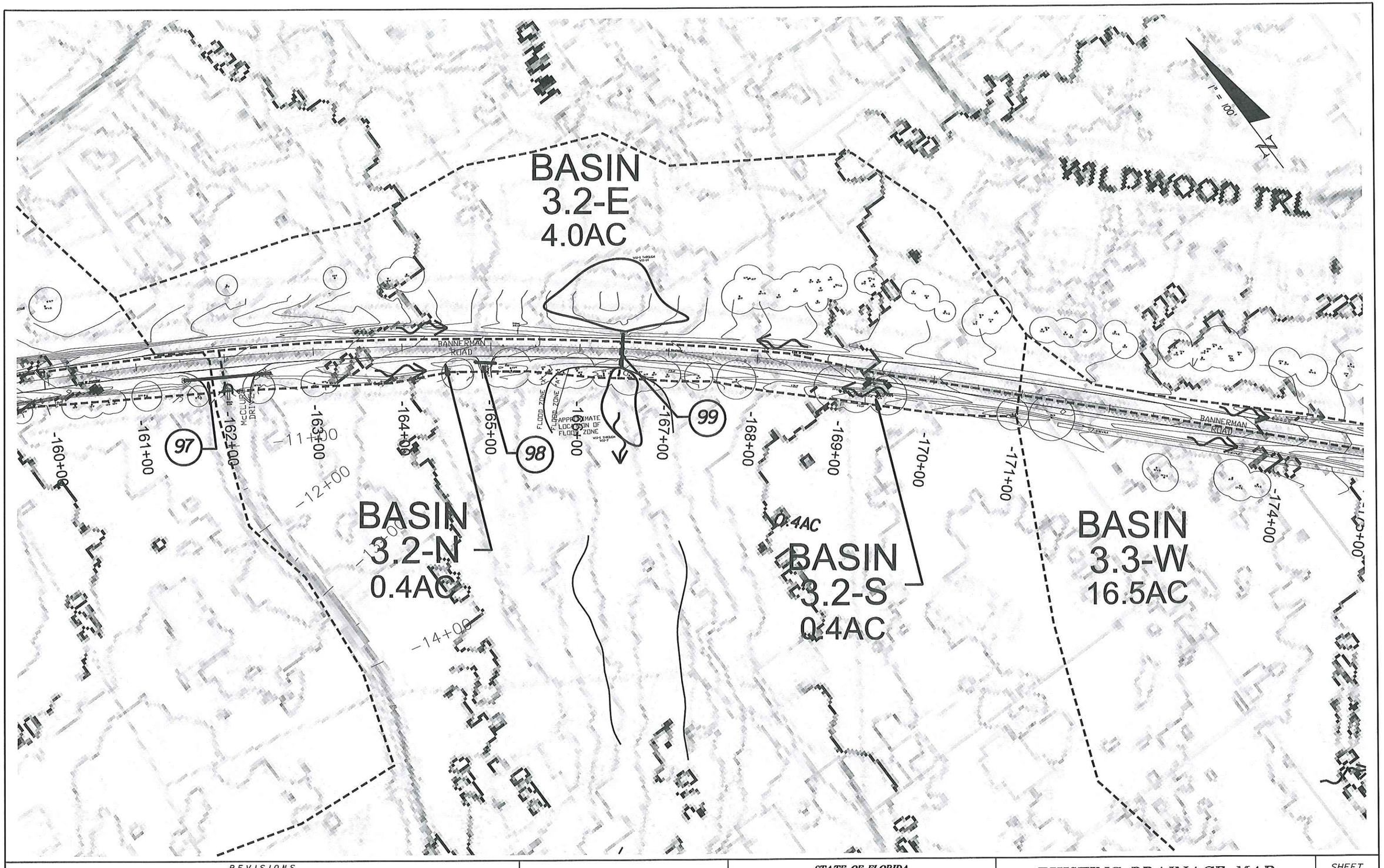

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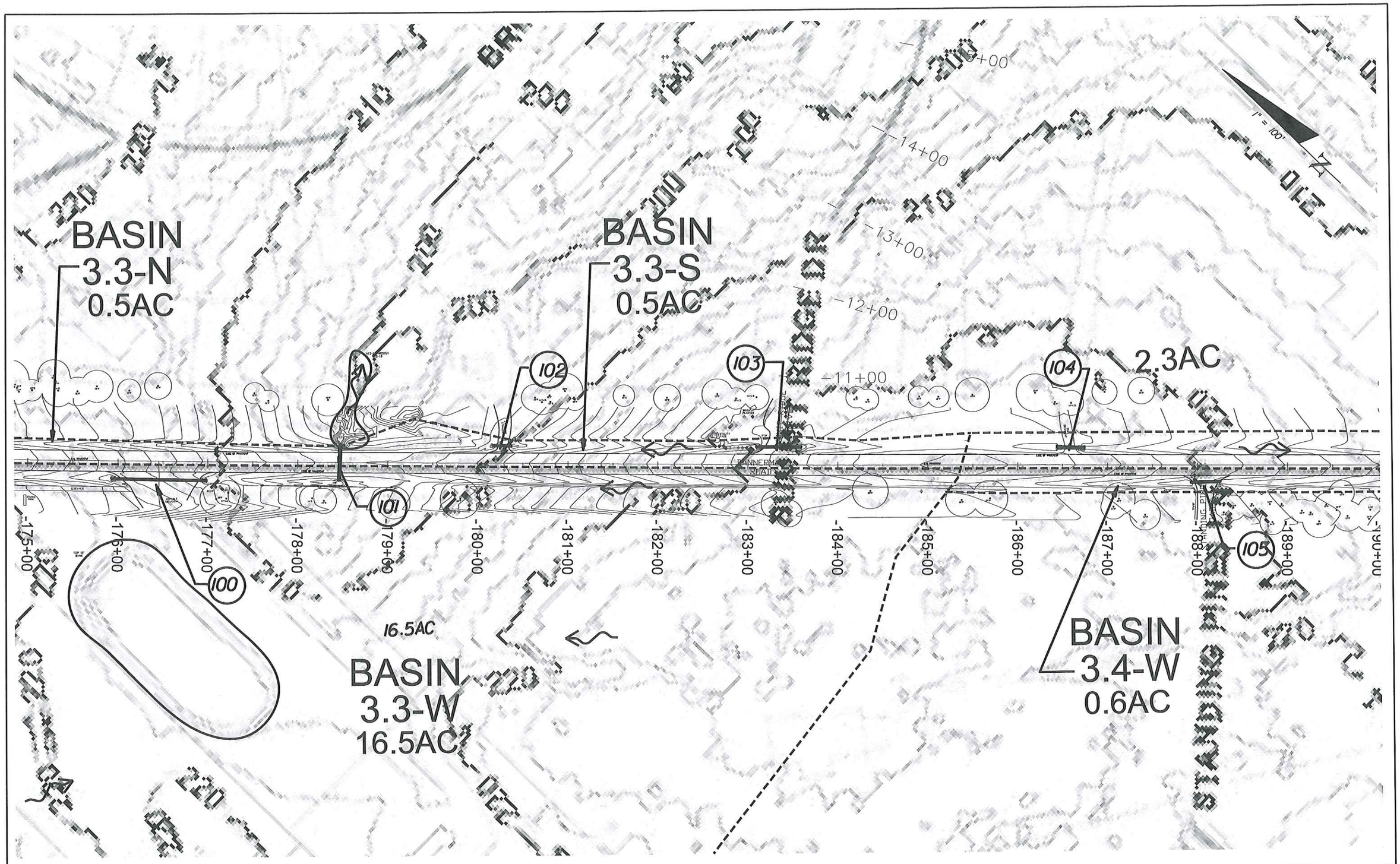

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STATE OF FLORIDA
LEON COUNTY

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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 12

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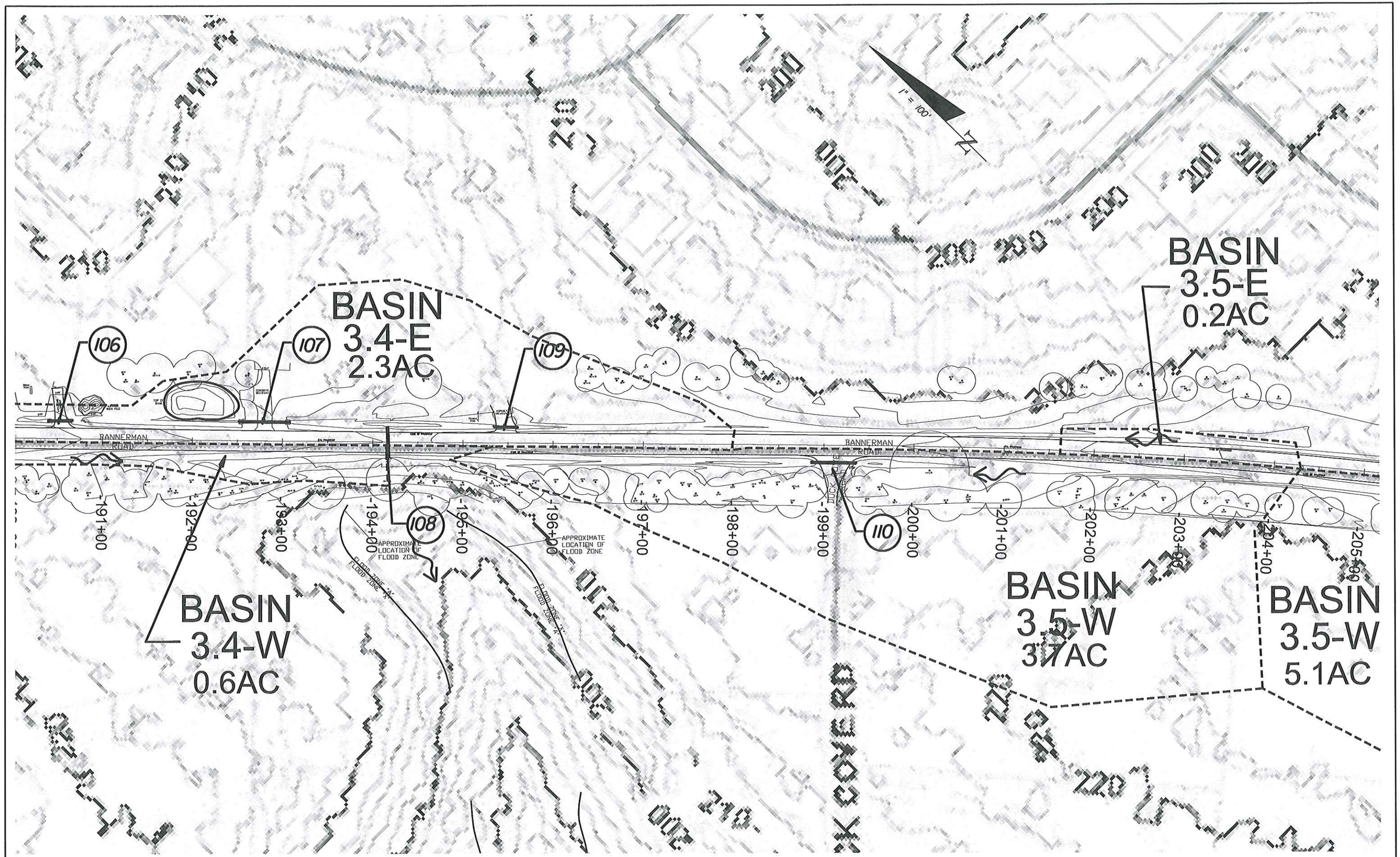

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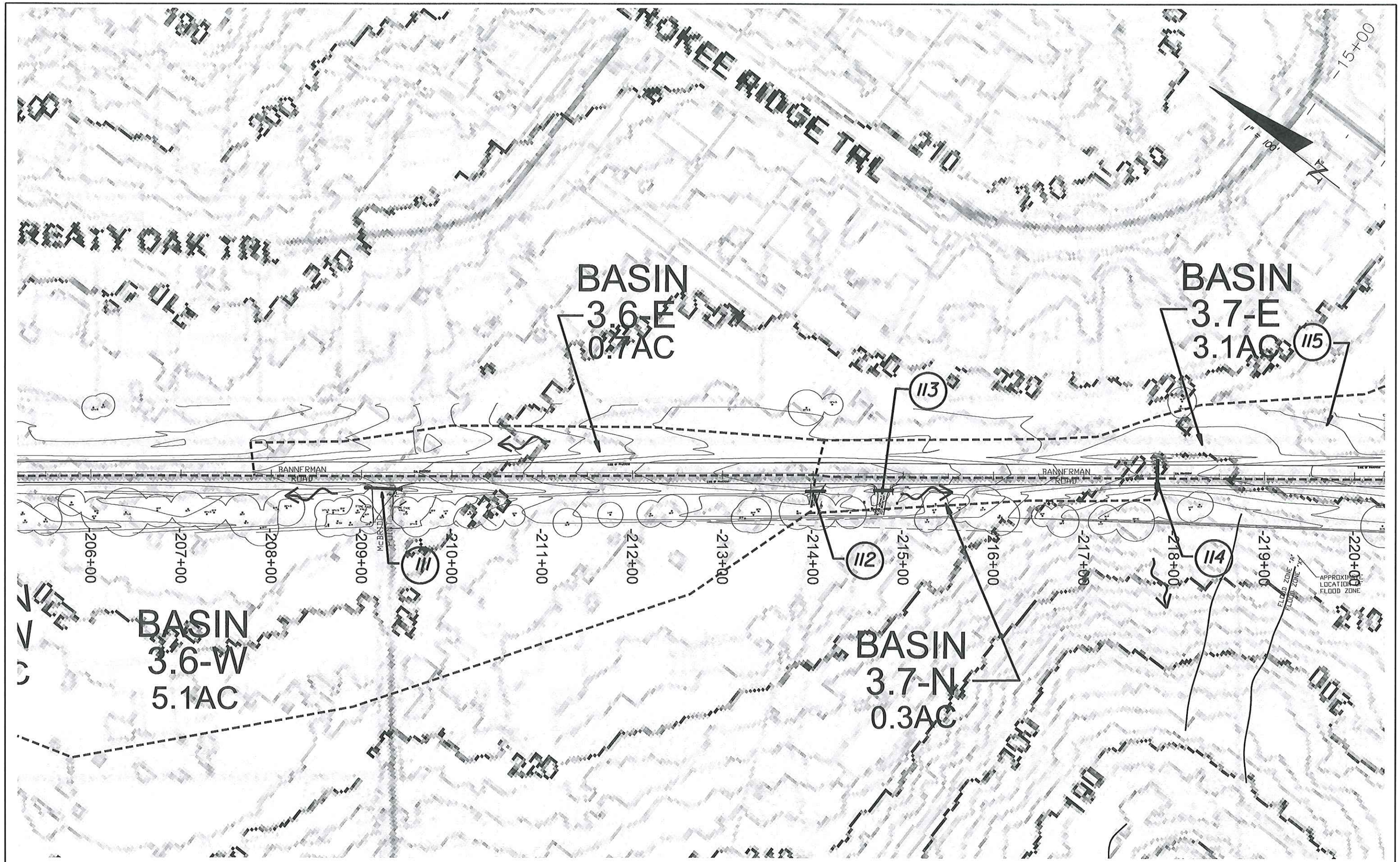

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LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 14

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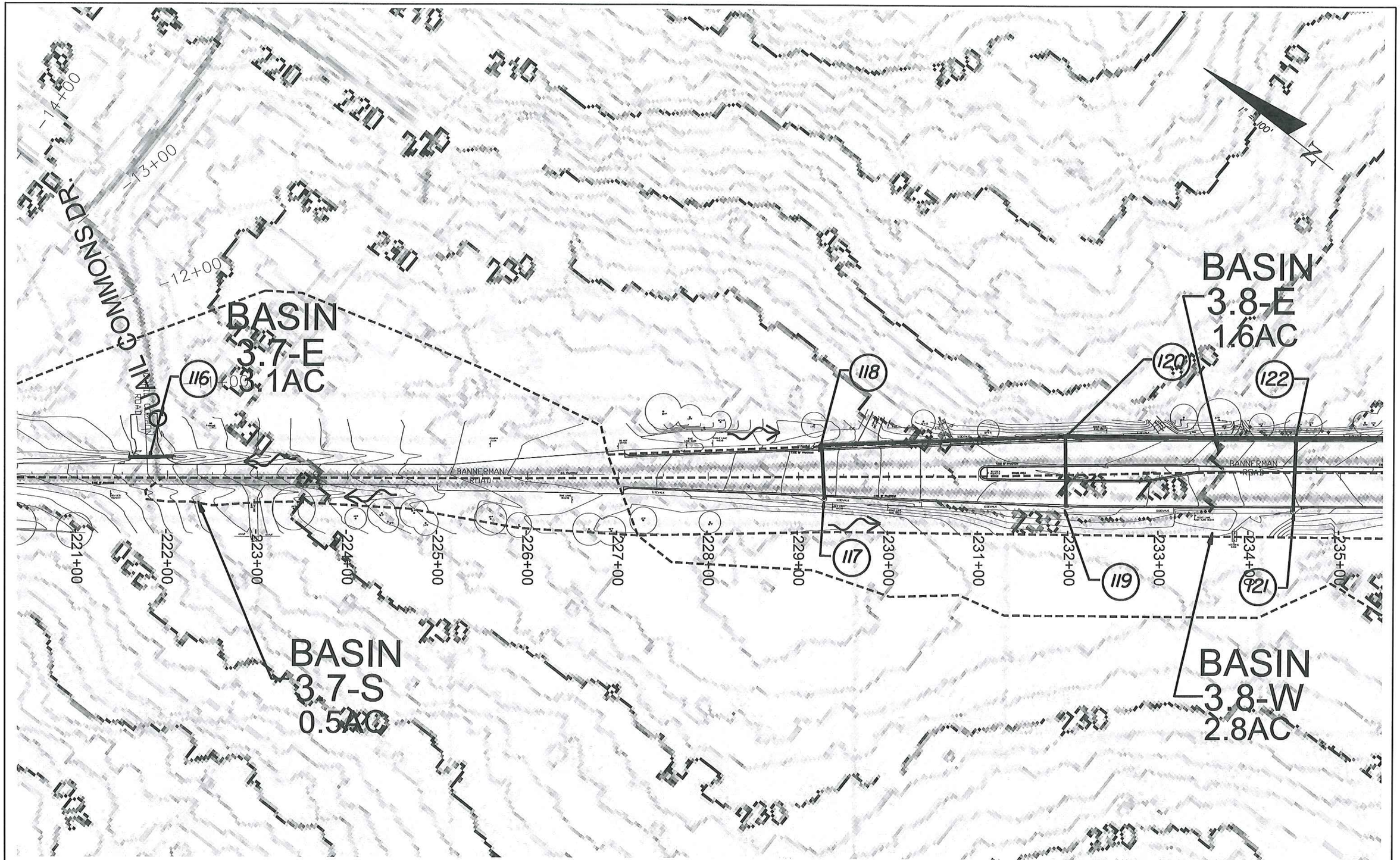

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STATE OF FLORIDA LEON COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 15

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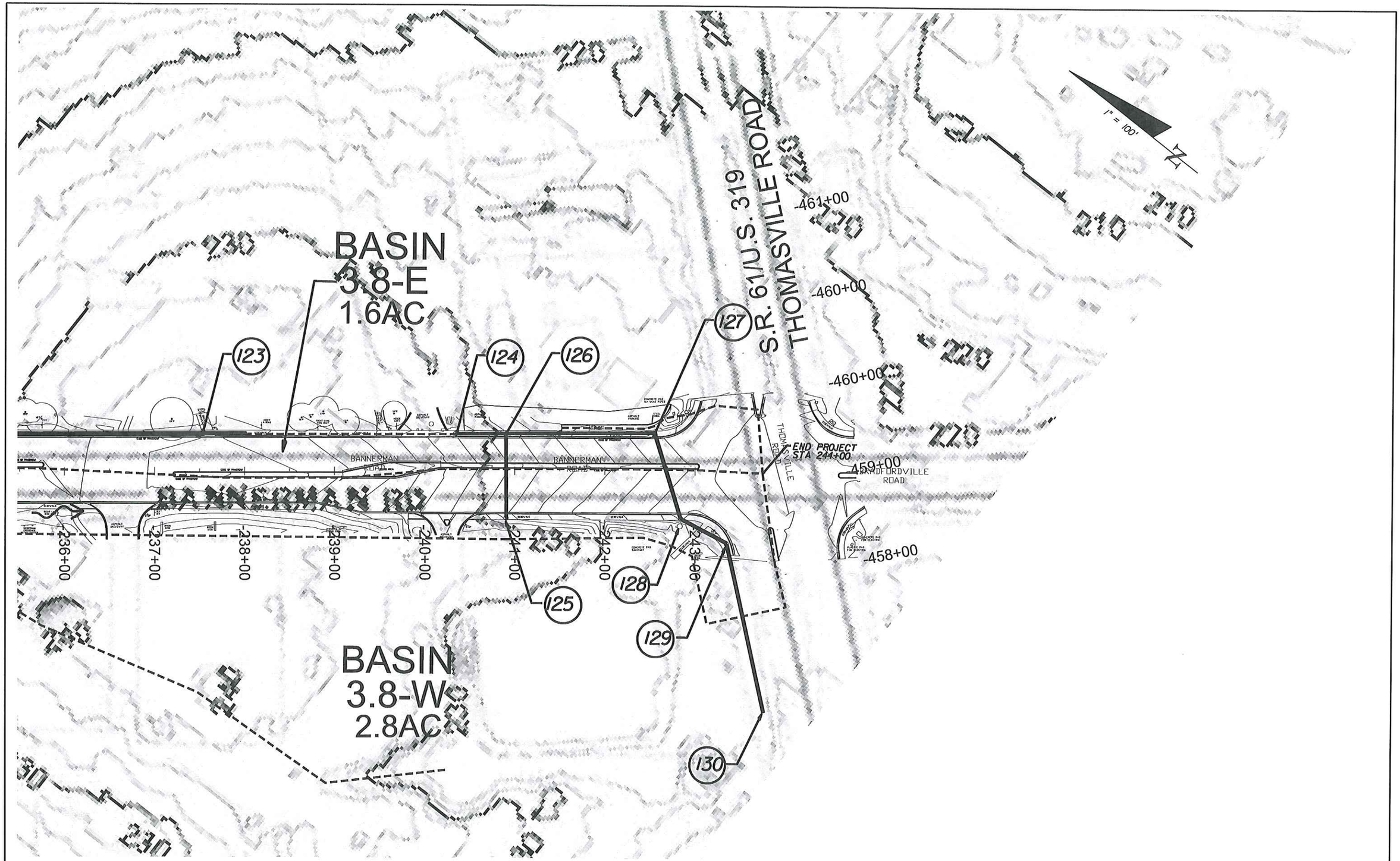

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STATE OF FLORIDA
LEON COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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EXISTING DRAINAGE MAP
BANNERMAN ROAD

SHEET NO. 16

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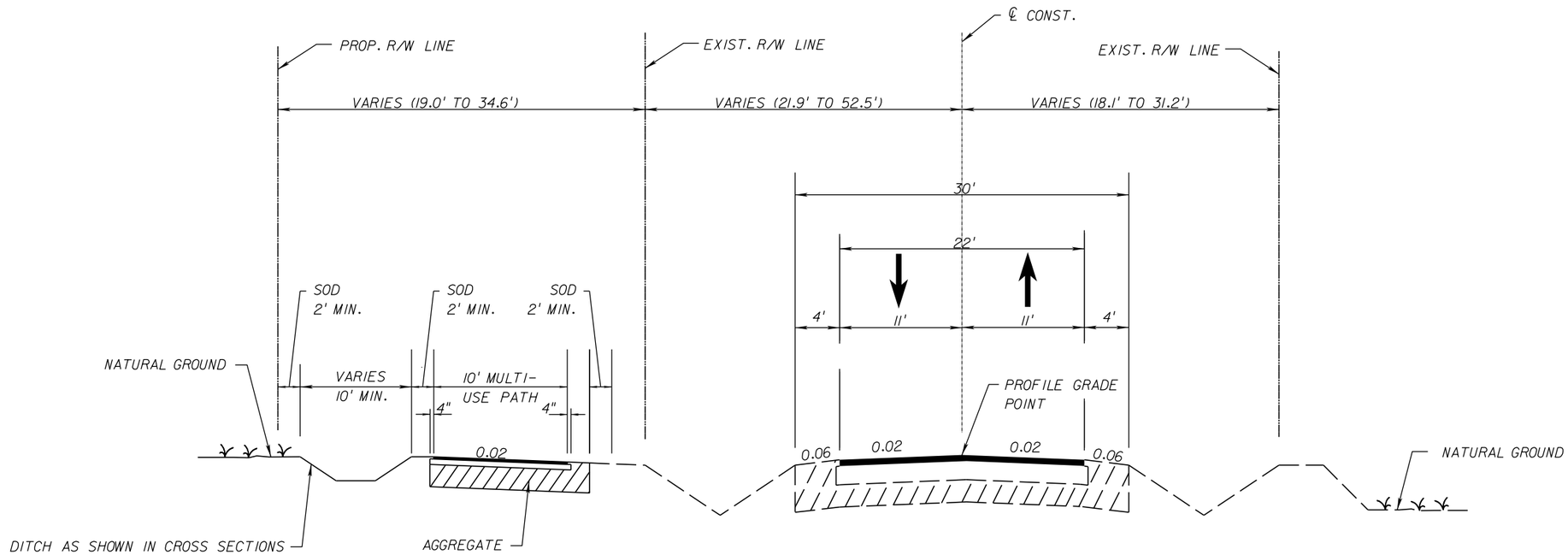
Appendix B

Typical Sections

SEGMENT 1 & 2



PROPOSED MULTI-USE PATH

EXISTING ROADWAY
(2-11' LANES RURAL UNDIVIDED)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 N. Westshore Boulevard, Suite 500
Tampa, Florida 33607-3999
813-289-5550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

TYPICAL SECTIONS

SHEET NO.

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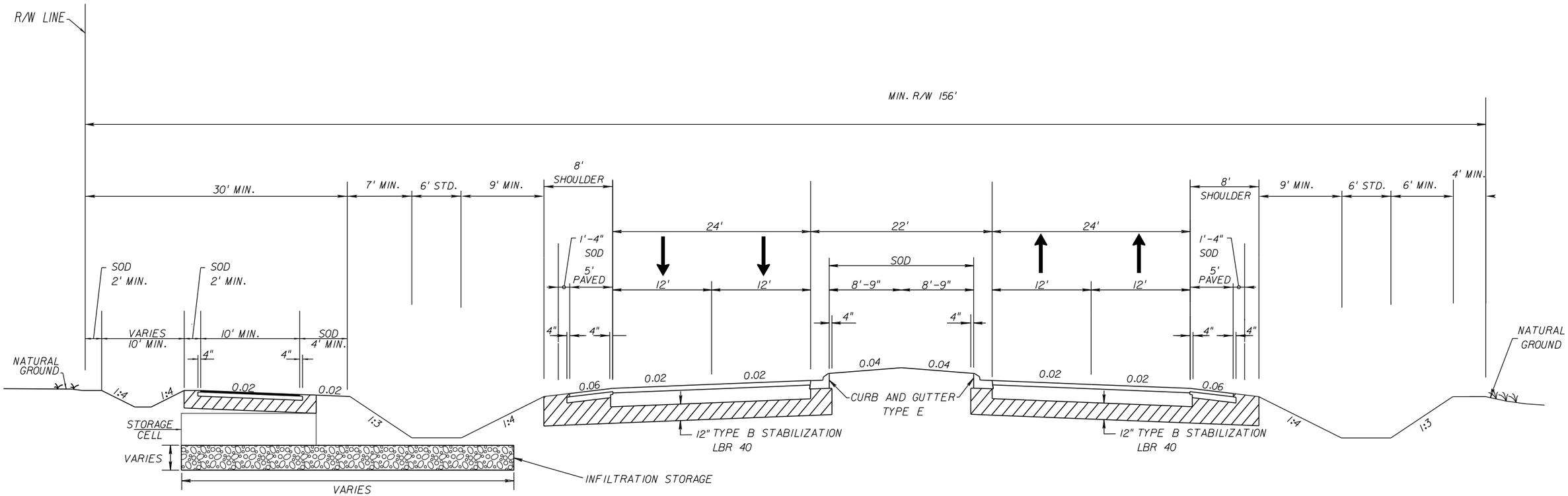

BANNERMAN ROAD
TEKESTA TO THOMASVILLE RD.

SEGMENT 3
ALTERNATE A

REVISIONS					LEON COUNTY				SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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Appendix C

Geotechnical Reports

PHASE I
ROADWAY SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

Prepared For:

REYNOLDS, SMITH, AND HILLS, INC.
1701 HERMITAGE BOULEVARD
SUITE 101
TALLAHASSEE, FLORIDA 32308

Prepared By:

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.
3154 ELIZA ROAD
TALLAHASSEE, FLORIDA 32308
(850) 386-1253

October 2010
23-59-10-02

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

October 27, 2010

EGS File Number: 23-59-10-02

Reynolds, Smith, and Hills, Inc.
1701 Hermitage Blvd.
Suite 101
Tallahassee, FL 32308

ATTN: Nicholi Arnio, P.E.
Project Manager

SUBJECT: **Phase I Roadway Soil Survey**
Bannerman Road Corridor Study
Bannerman Road
Leon County, Florida

Dear Nicholi:

Attached is a Copy of the Phase I Roadway Soil Survey Report for the above referenced project. Presented in this Preliminary Report is a summary of the subsurface materials encountered, field and laboratory test results, measured groundwater, estimated "normal" seasonal high groundwater values, and subsurface conditions.

Environmental and Geotechnical Specialists, Inc. (**EGS**) appreciates the opportunity to be of service on this project. If you have any questions concerning the enclosed Report, please do not hesitate to call Tom or myself at (850) 386-1253.

Very truly yours,

Environmental and Geotechnical Specialists, Inc.
Certificate of Engineering Authorization Number: 6222

10-27-10

Myron L. Hayden, Ph.D., P.E.
Senior Geotechnical Engineer
FL P.E. No. 34067

10-27-10

Matthew R. Landschoot, E.I
Geotechnical Engineer I

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APPENDIX C	USDA SOIL SURVEY

1.0 INTRODUCTION

Environmental and Geotechnical Specialists, Inc. (**EGS**) has completed the Phase I Roadway Soil Survey, as authorized by **Reynolds, Smith, and Hills, Inc.**, for the proposed reconstruction of Bannerman Road. This Report includes a summary of the preliminary geotechnical investigation conducted for this project, an evaluation of field and laboratory test data, preparation of the soil boring logs and soil classification data sheets, and both measured and estimated "normal" seasonal high groundwater results.

2.0 SITE LOCATION AND CONDITIONS

It is the understanding of **EGS** that this project is to consist of the widening of Bannerman Road from Meridian Road to the intersection at Thomasville Road. A Site Location Map has been provided as **Figure 1**.

The general topography of the project area is shown in the United States Geological Survey (**USGS**) Topographic Map, which has been included as **Figure 2**. As can be seen in **Figure 2**, the project area is moderately hilly and primarily drains to the southwest towards Holley Pond. The ground surface elevation of the Project appears to vary from around EL 160 feet to EL 240 feet.

3.0 SUBSURFACE INVESTIGATION

The subsurface investigation outlined in this Phase I Roadway Soil Survey was conducted in October 2010 under the supervision of Thomas H. Hayden, P.E, with Matthew R. Landschoot, E.I. serving as the Field Engineer, and Myron L. Hayden, P.E. serving as the Senior Geotechnical Engineer. The soil boring locations outlined in this Report were determined based on the variations in soil types that were reported in the United States Department of Agriculture's (**USDA**) Soil Survey of Leon County.

EGS installed Soil Boring's **BR-1** through **BR-24** using a Hand Auger coupled with a Static Cone Penetrometer Index (**CPI**) test conducted on two and one-half (2 ½) feet intervals. The Cone Penetration Index (**CPI**) test results presented in this Report have been converted to equivalent standard penetration test (**SPT**) "**N**" values using the correlation of **SPT** "**N**" = **CPI** "**C**"/4.

Representative soil samples were collected on one (1) foot intervals in each soil boring. The soil samples were classified in the field by **EGS** personnel and then sealed and transported to **EGS**'s laboratory for additional testing.

The laboratory tests performed included water contents, grain-size distribution, and Atterberg limits. The soil samples were classified in respect to the Unified Soil Classification (**UNIFIED**) system and the American Association of State Highway and Transportation Officials (**AASHTO**) soil classification system. The Boring Location and Groundwater Data for each boring have been provided in **TABLE 1**.

4.0 SUBSURFACE CONDITIONS

4.1 Soils

As can be seen in the Soil Boring Logs provided in **APPENDIX A**, the surficial soil layers encountered throughout the project consist primarily of a combination of silty fine sand (**A-2-4/STRATUM 1**) and clayey fine sand (**A-2-6/STRATA 2**).

In addition to the surficial layers of silty fine sand and clayey fine sand, clayey sand (**A-6/STRATUM 3)** and sandy clays (**A-7-6/STRATUM 4**) were encountered.

A copy of the Report of Tests has been provided in **TABLE 2**. Detailed Soil Boring Logs for this investigation have been provided in **APPENDIX A**, with the Soil Data Classification Data Sheets provided in **APPENDIX B**. Soil Boring Location Maps have been provided as **Figures 3A** through **3E** with the Soil Survey provided in **Figure 4A** through **4B**.

4.2 Groundwater Conditions

EGS did not encounter the permanent groundwater table for this study. Based on material types encountered and a review of the **USGS** topographic data, **EGS** believes that "perched" groundwater will exist in some areas within three (3) feet of the existing ground surface.

It should be noted that the following intersections are known to have "perched" groundwater within three (3) feet of the roadway surface; therefore, underdrains have been added at these intersections:

- Bannerman Road and Meridian Road
- Bannerman Road and Bull Headley Road
- Bannerman Road and Tekesta Drive

To facilitate use of the groundwater data, **TABLE 1** has been provided which contains a summary of the depths to groundwater "measured" after a period of 24-hours, and the estimated depths to "normal" seasonal high groundwater. As can be seen in this **TABLE**, **EGS** did not encounter groundwater in any of the soil borings installed for this study. It should be noted that elevations were not available at the time of this Report

4.3 USDA Soil Survey

As part of this investigation, **EGS** reviewed the United States Department of Agriculture's (**USDA**) Soil Survey of Leon County. The soils reported in the **USDA** Soil Survey consist of **Dothan Fine Sand**, **Orangeburg Fine Sand**, **Pelham Fine Sand**, **Plummer Fine Sand**, and **Yonges Fine Sandy Loam**, which are relatively consistent with the soils encountered during the field investigation. It should be noted, however, that the **USDA** Soil Survey is used as an approximation of likely soils within the project area. Slight variations in soil properties will occur when comparing data from the **USDA** Soil Survey and data obtained in the field.

To correlate the properties summarized in the **USDA** Soil Survey, **EGS** has provided **TABLE 3**, which includes the soil boring numbers, **USDA** material identifications, **USDA** material descriptions, reported soil classification, and reported depth to seasonal high groundwater. Copies of selected **TABLES** from the **USDA** Soil Survey and **Figures C-1** through **C-2** have been provided in **APPENDIX C**.

4.4 Karst Considerations

A review of the Leon County/City of Tallahassee GIS Database indicated that **there is an area where karst conditions may exist below the corridor**. This location is in the area of Bannerman Road and Lanternlight Road. If a karst feature exists at the location, its horizontal extent is likely limited. The locations of the likely karst features along the area of the corridor are shown in **Figure 5**.

5.0 RECOMMENDATIONS

Based on a review of the soils encountered for this Phase I Roadway Soil Survey, **EGS recommends** the following should be considered during the roadway design process:

- Deep cuts should be avoided where possible to reduce encountering unsuitable plastic material that will need to be overexcavated;
- A karst condition may exist in the area of Bannerman Road and Laternlight Road that could impact the long-term performance of the roadway;
- Although **EGS did not encounter** any groundwater in the soil borings installed for this study, perched groundwater should be anticipated within three (3) feet of the existing ground surface at some locations during and after periods of heavy rains.

6.0 CLOSURE

The data and results presented in this Phase I Roadway Soil Survey are intended for the use of **Reynolds, Smith, and Hills, Inc**. and **Leon County's Department of Public Works** for the preliminary evaluation of the proposed Bannerman Road improvements. This Report is preliminary and not intended for Final Design or any other use and will likely not be applicable. The data and recommendations presented in this Report are based on the borings made at the specific locations and depths noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, **Environmental and Geotechnical Specialists, Inc.** requests the opportunity to review the data and make any modifications to the design recommendations which may be appropriate.

7.0 SIGNATURES

Environmental and Geotechnical Specialists, Inc.
Florida Certificate of Engineering Authorization No. 6222

10-27-10

Myron L. Hayden, P.E., PhD.
Senior Geotechnical Engineer
FL P.E. Number 34067

10-27-10

Matthew R. Landschoot, E.I.
Staff Engineer

TABLES

TABLE 1
SOIL BORING LOCATION AND GROUNDWATER DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	DISTANCE FROM MERIDIAN ROAD (MILE)	OFFSET FROM EXISTING EDGE OF PAVEMENT (FEET)		MEASURED GROUNDWATER [2] DEPTH (FEET)	ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER DEPTH (FEET)	STATE PLANE COORDINATES NORTHING	STATE PLANE COORDINATES EASTING	GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [3] LATITUDE DEG(°)	LATITUDE MIN (')	LONGITUDE DEG(°)	LONGITUDE MIN (')
SOIL BORING LOCATIONS												
BR-1	5.5	4.40	6.0	LT	> 5.5	3.0 [4]	567923	2057252	30	33.678	84	13.082
BR-2	5.5	4.11	6.0	RT	> 5.5	4.0 [4]	569186	2056371	30	33.888	84	13.249
BR-3	5.5	3.89	6.0	LT	> 5.5	4.0 [4]	570042	2055636	30	34.029	84	13.391
BR-4	5.5	3.82	6.0	RT	> 5.5	> 5.5	570360	2055429	30	34.082	84	13.428
BR-5	5.5	3.54	6.0	LT	> 5.5	4.0 [4]	571452	2054452	30	34.263	84	13.618
BR-6	5.5	3.29	6.0	RT	> 5.5	4.0 [4]	572443	2053538	30	34.425	84	13.786
BR-7	5.5	3.17	6.0	LT	> 5.5	4.0 [4]	572855	2053093	30	34.494	84	13.873
BR-8	5.5	3.06	6.0	RT	> 5.5	3.0 [4]	573297	2052711	30	34.568	84	13.946
BR-9	5.5	2.92	6.0	LT	> 5.5	3.0 [4]	573768	2052135	30	34.644	84	14.056
BR-10	5.5	2.76	6.0	RT	> 5.5	3.0 [4]	574223	2051418	30	34.720	84	14.020
BR-11	5.5	2.63	6.0	LT	> 5.5	4.0 [4]	574531	2050779	30	34.771	84	14.313
BR-12	5.5	2.49	6.0	RT	> 5.5	4.0 [4]	574988	2050186	30	34.847	84	14.425

NOTES: 1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. BASED OFF 24 HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
3. DETERMINED WITH A TRIMBLE GEOEXPLORER XH GPS.
4. EXISTS IN A "PERCHED" STATE.

TABLE 1 (CONT.)
SOIL BORING LOCATION AND GROUNDWATER DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	DISTANCE FROM MERIDIAN ROAD (MILE)	OFFSET FROM EXISTING EDGE OF PAVEMENT (FEET)		MEASURED GROUNDWATER [2] DEPTH (FEET)	ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER DEPTH (FEET)	STATE PLANE COORDINATES NORTHING	STATE PLANE COORDINATES EASTING	GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [3] LATITUDE DEG(°)	LATITUDE MIN (')	LONGITUDE DEG(°)	LONGITUDE MIN (')
SOIL BORING LOCATIONS												
BR-13	5.5	2.26	6.0	LT	> 5.5	5.0 [4]	575679	2049203	30	34.961	84	14.612
BR-14	5.5	2.06	6.0	RT	> 5.5	1.0 [4]	576273	2048312	30	35.060	84	14.783
BR-15	5.5	1.82	6.0	LT	> 5.5	4.0 [4]	576862	2047193	30	35.157	84	14.994
BR-16	5.5	1.51	6.0	RT	> 5.5	5.0 [4]	577374	2045682	30	35.242	84	15.283
BR-17	5.5	1.40	6.0	LT	> 5.5	4.0 [4]	577333	2045080	30	35.236	84	15.396
BR-18	5.5	1.23	6.0	RT	> 5.5	3.0 [4]	577373	2044176	30	35.243	84	15.569
BR-19	5.5	1.12	6.0	LT	> 5.5	5.0 [4]	577343	2043625	30	35.238	84	15.675
BR-20	5.5	1.00	6.0	RT	> 5.5	4.0 [4]	577371	2043011	30	35.243	84	15.792
BR-21	5.5	0.84	6.0	LT	> 5.5	> 5.5	577342	2042152	30	35.237	84	15.958
BR-22	5.5	0.66	6.0	RT	> 5.5	> 5.5	577364	2041195	30	35.244	84	16.138
BR-23	5.5	0.34	6.0	LT	> 5.5	> 5.5	577327	2039483	30	35.235	84	16.465
BR-24	5.5	0.04	6.0	RT	> 5.5	> 5.5	577347	2037928	30	35.241	84	16.762

NOTES: 1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. BASED OFF 24 HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
3. DETERMINED WITH A TRIMBLE GEOEXPLORER XH GPS.
4. EXISTS IN A "PERCHED" STATE.

TABLE 2
REPORT OF TESTS
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

REPORT OF MATERIAL TESTS

STRATUM NO.	GRAIN-SIZE (PERCENT PASSING)								ATTERBERG LIMITS			CLASSIFICATION		DESCRIPTION	
	NUMBER OF TESTS	4	10	20	40	60	100	200	NUMBER OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	UNIFIED	AASHTO	COLOR	MATERIAL
1	4	100	100	97 - 99	72 - 94	37 - 65	23 - 45	21 - 26	2	18 - 22	6 - 7	SM	A-2-4	GRAY, BROWN	SILTY FINE SAND
2	10	100	100	98 - 100	90 - 99	68 - 92	50 - 71	26 - 35	4	17 - 36	11 - 20	SC	A-2-6	GRAY, BROWN	CLAYEY FINE SAND
3	26	100	100	97 - 100	70 - 99	42 - 96	39 - 81	37 - 49	12	17 - 39	11 - 19	SC	A-6	GRAY, BROWN, RED, ORANGE	CLAYEY SAND
4	8	100	100	90 - 100	86 - 100	65 - 99	55 - 98	51 - 80	6	41 - 46	18 - 25	CL	A-7-6	GRAY, BROWN, RED	SANDY CLAY

MATERIAL NOTES:

1. STRATUM 1 IS A "SELECT" MATERIAL AND IS SUITABLE FOR REUSE IN THE ROADWAY EMBANKMENT, HOWEVER; DUE TO THE HIGH FINES CONTENT THIS MATERIAL MAY BE DIFFICULT TO COMPACT WHEN WET.
2. STRATA 2, 3, AND 4 ARE "PLASTIC" SOILS AND MAY BE REUSED ABOVE THE EXISTING WATER TABLE AT THE TIME OF CONSTRUCTION TO WITHIN FOUR (4) FEET OF THE ROADWAY BASE. FOR CUT SECTIONS, "PLASTIC" SOILS SHOULD BE REMOVED TO A MINIMUM OF TWO (2) FEET BELOW THE ROADWAY BASE. MATERIALS FROM THESE STRATA WILL RETAIN MOISTURE AND BE DIFFICULT TO DRY AND COMPACT. IF THESE MATERIALS ARE REUSED THEY SHOULD BE PLACED UNIFORMLY IN THE LOWER PORTION OF THE EMBANKMENT FOR SOME DISTANCE, RATHER THAN FULL DEPTH FOR A SHORT DISTANCE.

RELATIVE DENSITY OR CONSISTENCY OF MATERIALS

GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 7	SOFT	1 - 3
MEDIUM DENSE OR COMPACT	7 - 21	FIRM	3 - 6
DENSE	21 - 35	STIFF	6 - 11
VERY DENSE	GREATER THAN 35	VERY STIFF	11 - 21
		HARD	GREATER THAN 21

TABLE 3
USDA SOIL SURVEY DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	UNIFIED MATERIAL CLASSIFICATION	AASHTO MATERIAL CLASSIFICATION	DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
BR-1, BR-2, BR-3, BR-4	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-5	33	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	
BR-6	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-7	39	0 - 26	PELHAM FINE SAND	SM	A-2-4	0.5 - 1.5
		26 - 80	PELHAM SANDY CLAY LOAM	SM, SC	A-2, A-4, A-6	
BR-8	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-9	52	0 - 9	YONGES FINE SANDY LOAM	SM	A-2-4	0.0 - 1.0
		9 - 71	YONGES SANDY CLAY LOAM	SC, CL	A-6, A-7	
		71 - 80	YONGES SANDY CLAY LOAM	SM, SC, CL	A-4, A-6	

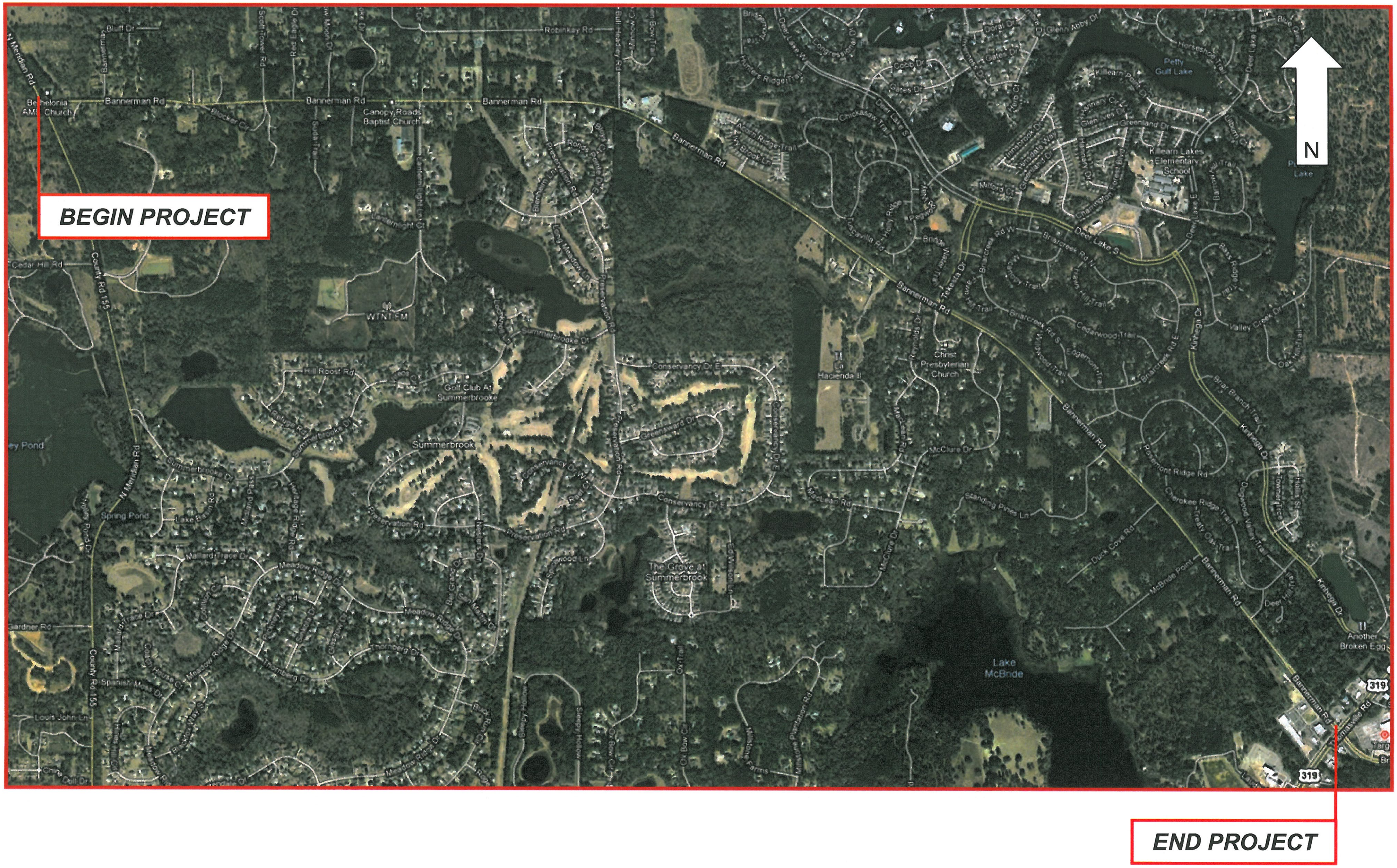
NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA
2. REPORTED TO EXIST IN A "PERCHED" CONDITION
3. SEE **APPENDIX C** FOR DETAILED **USDA** SOIL SURVEY INFORMATION

TABLE 3 (CONT.)
USDA SOIL SURVEY DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	UNIFIED MATERIAL CLASSIFICATION	AASHTO MATERIAL CLASSIFICATION	DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
BR-10	11	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-11	52	0 - 9	YONGES FINE SANDY LOAM	SM	A-2-4	0.0 - 1.0
		9 - 71	YONGES SANDY CLAY LOAM	SC, CL	A-6, A-7	
		71 - 80	YONGES SANDY CLAY LOAM	SM, SC, CL	A-4, A-6	
BR-12	11	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-13, BR-14, BR-15, BR-16	33, 34	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	
BR-17	41	0 - 61	PLUMMER FINE SAND	SM	A-2-4	0.0 - 1.5
		61 - 80	PLUMMER SANDY CLAY LOAM	SM, SC	A-2-4, A-2-6	
BR-18, BR-19, BR-20, BR-21, BR-22, BR-23, BR-24	33, 34, 35	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	

NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA
2. REPORTED TO EXIST IN A "PERCHED" CONDITION
3. SEE **APPENDIX C** FOR DETAILED **USDA** SOIL SURVEY INFORMATION

FIGURES



DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

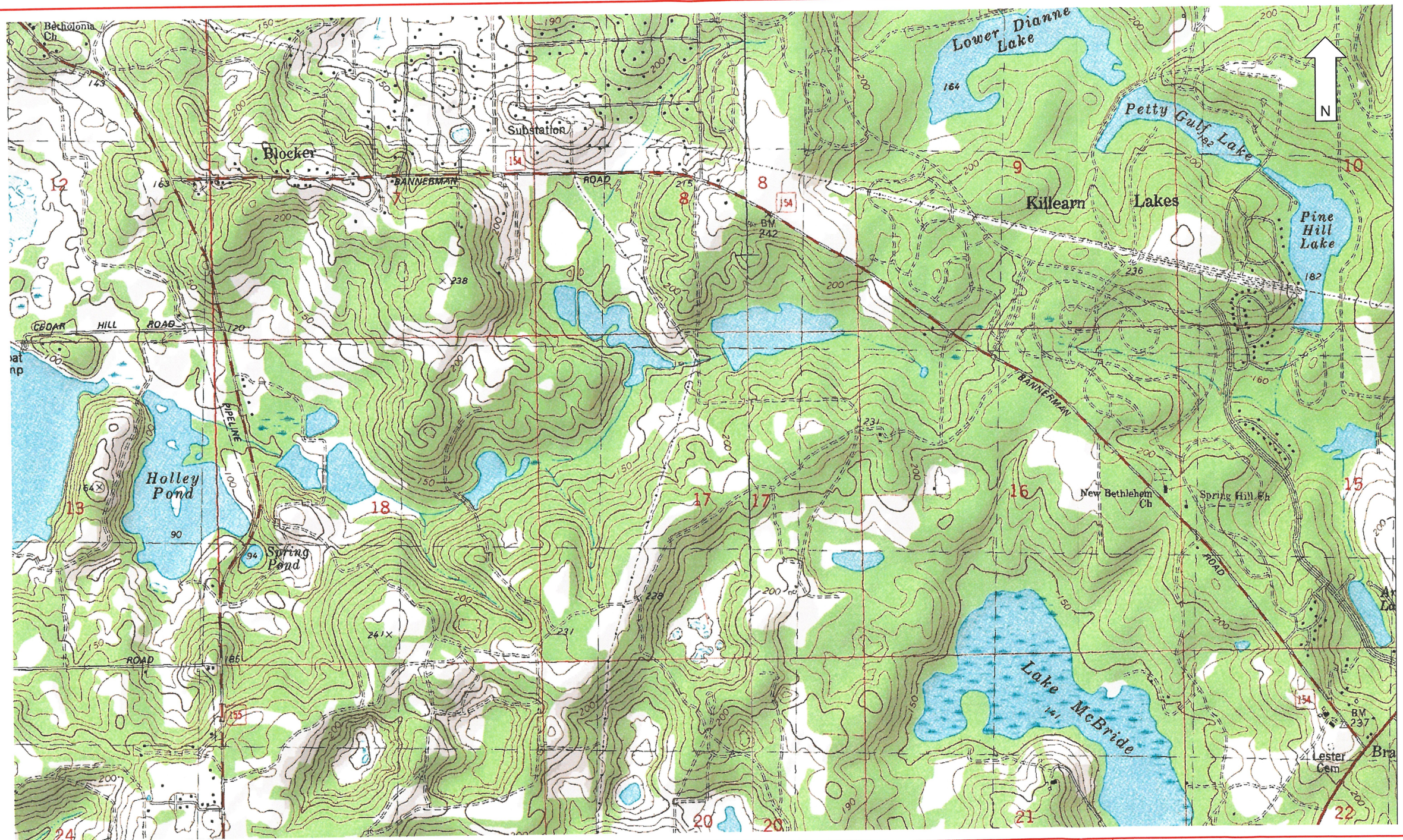
EGS Environmental and Geotechnical Specialists, Inc.

3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

TITLE:

SITE LOCATION MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE:	FIGURE NO.:
OCTOBER 2010	1



DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
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PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.

3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | Fax #: (850) 385-8050

TITLE:
USGS – TOPOGRAPHIC MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 2

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.		TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 / FIGURE NO.: 3A

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc.	TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: T. HAYDEN, P.E.		3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308 OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 | FIGURE NO.: 3B

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.

3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 3C

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

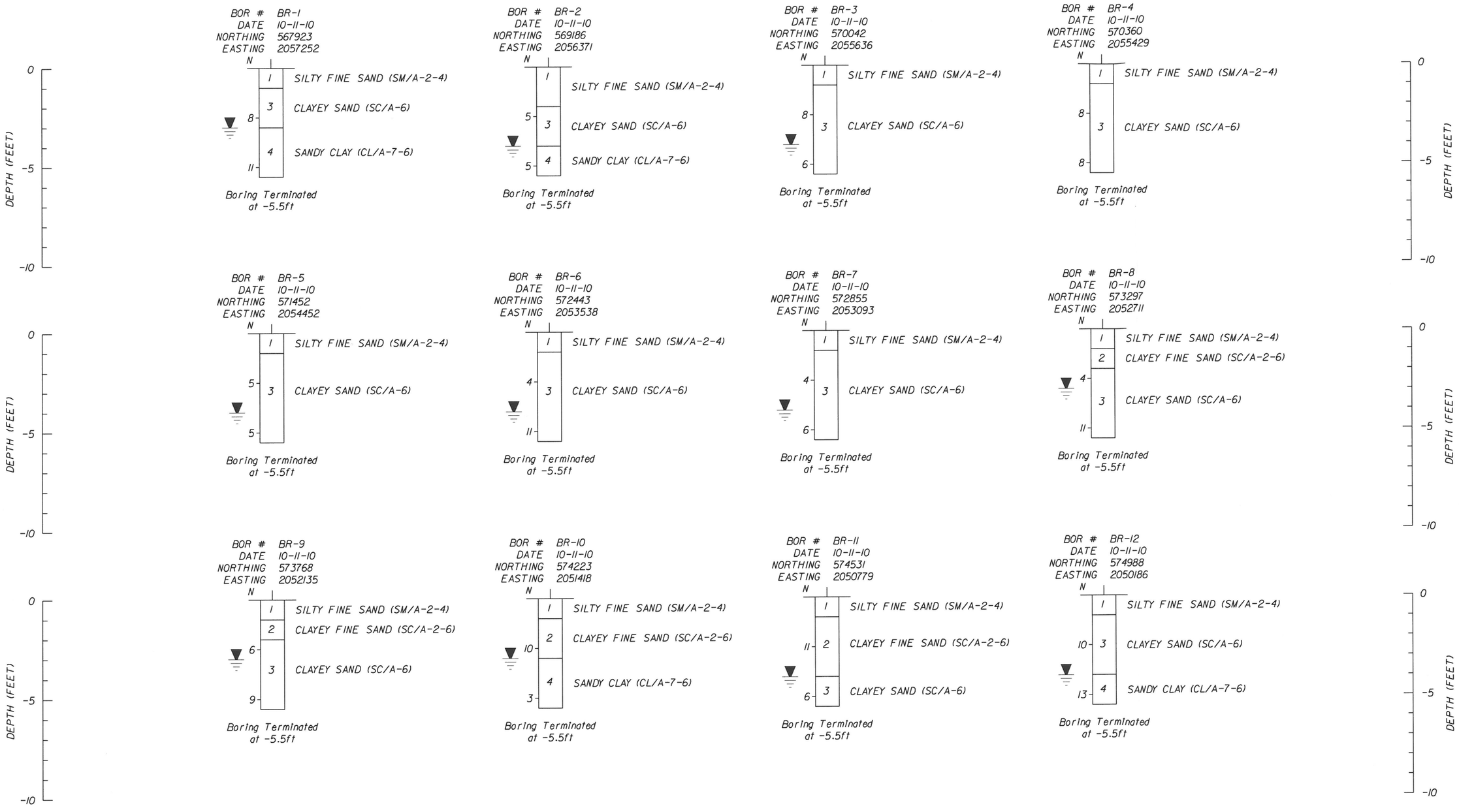
EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 3D

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc.	TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: T. HAYDEN, P.E.			
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 / FIGURE NO.: 3E

3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050



NOTES:

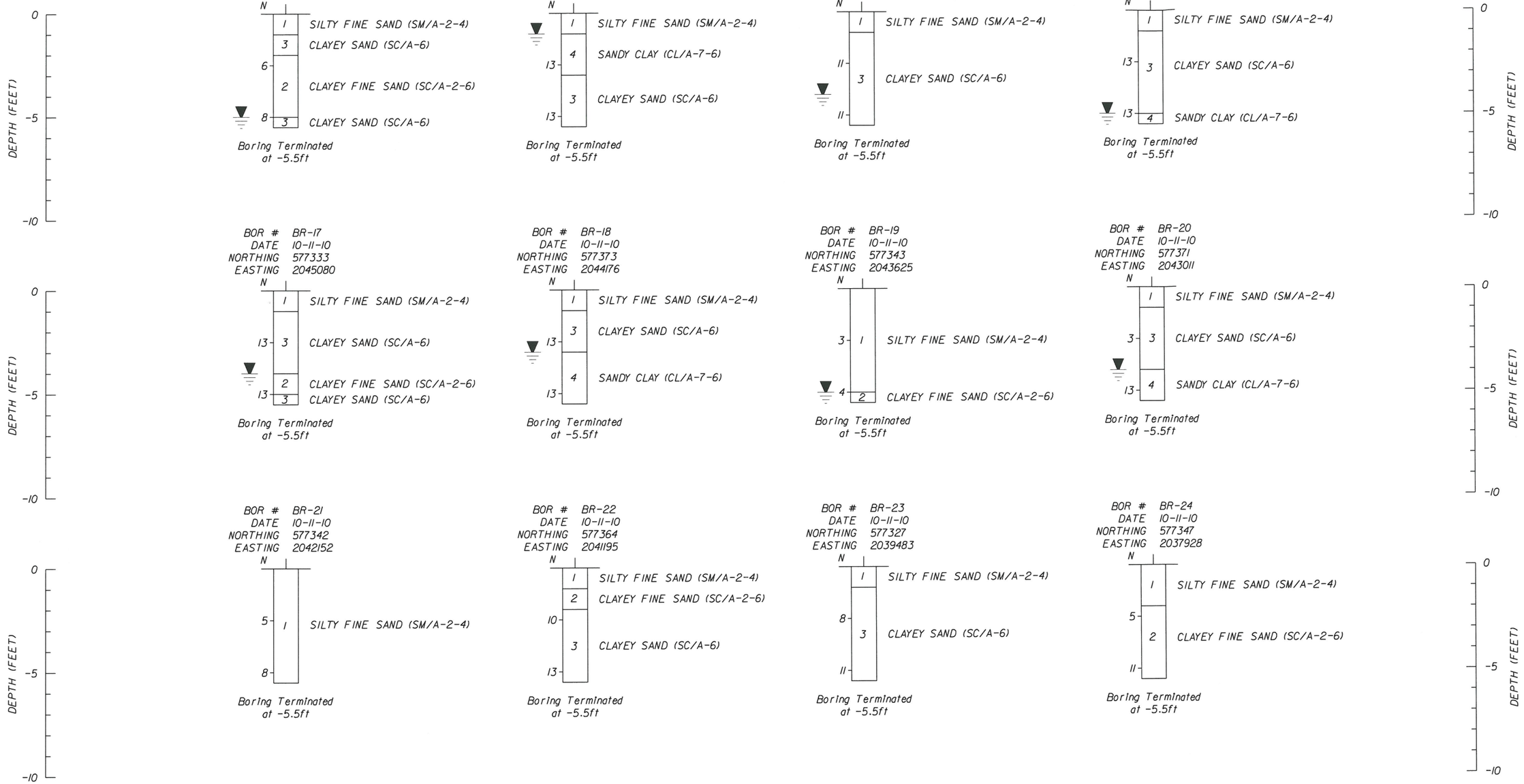
1. SOIL BORINGS PLOTTED TO DEPTH.
2. NUMBERS LEFT OF BORINGS INDICATE MEASURED STANDARD PENETRATION VALUES (SPT) 'N' VALUES.
3. NUMBERS IN CENTER OF BORING INDICATE STRATUM NUMBER.
4. ▼ ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER LEVEL.
5. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE SOIL BORINGS AT THE DATE OF INSTALLATION.

PREPARED BY:	M. LANDSCHOOT, E.I.
REVISED:	M. LANDSCHOOT, E.I.
CHECKED:	T. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

SCALE:	DATE: OCTOBER 2010
PROJ. NO.: 23-59-10-02	FIGURE NO.: 4A



NOTES:

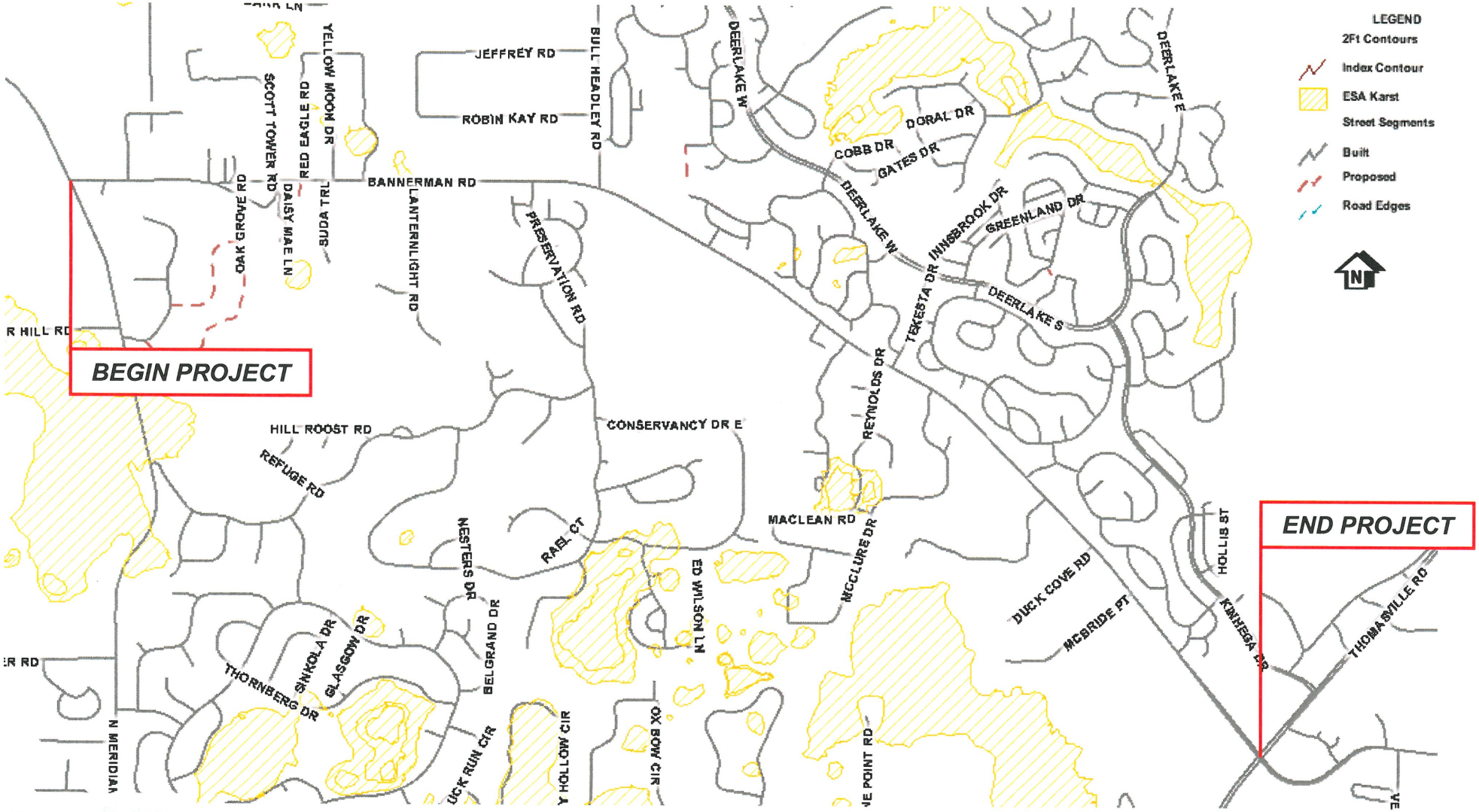
1. SOIL BORINGS PLOTTED TO DEPTH.
2. NUMBERS LEFT OF BORINGS INDICATE MEASURED STANDARD PENETRATION VALUES (SPT) 'N' VALUES.
3. NUMBERS IN CENTER OF BORING INDICATE STRATUM NUMBER.
4. ▼ ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER LEVEL.
5. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE SOIL BORINGS AT THE DATE OF INSTALLATION.

PREPARED BY:	M. LANDSCHOOT, E.I.
REVISED:	M. LANDSCHOOT, E.I.
CHECKED:	T. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

SCALE:	DATE: OCTOBER 2010
PROJ. NO.: 23-59-10-02	FIGURE NO.: 4B



Tallahassee-Leon County GIS
WWW.TLCGIS.ORG

TLCGIS Map Disclaimer: This product has been compiled from the most accurate source data from Leon County, the City of Tallahassee, and the Leon County Property Appraiser. However, this product is for reference purposes only and is not to be construed as a legal document or survey instrument. Any reliance on the information contained herein is at the user's own risk. Leon County, the City of Tallahassee, and the Leon County Property Appraiser assume no responsibility for any use of the information contained herein or any loss resulting therefrom.

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: T. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

TITLE:
KARST FEATURES MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 5

APPENDIX A
SOIL BORING LOGS

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-1 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY AND BROWN SILTY FINE SAND	SM A-2-4		13		
0.5	1					-200%=43	18		
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		19	8	
1	3						22		
	4			STIFF BROWN SANDY CLAY	CL A-7-6		23		
1.5	5					-200%=51 LL=42 PI=25	22	11	
	6								
2	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-2 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=26	9			
0.5	1						8			
	2			LOOSE BROWN CLAYEY SAND	SC A-6		13		5	
1	3						14			
	4			FIRM BROWN SANDY CLAY	CL A-7-6		24			
1.5	5					-200%=53 LL=41 PI=20	22		5	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-3 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
								10 20 30 40 60			10 20 30 40 60 80
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		11				
0.5	1			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=29 PI=14	16				
	2						16		8		
1	3			LOOSE BROWN CLAYEY SAND	SC A-6		14				
1.5	4						18				
	5					-200%=48	16		6		
2	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-4 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		5		
0.5	1					-200%=45 LL=24 PI=11	12		
1	2						15	8	
1.5	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		15		
2	4						15		
	5					-200%=40	14	8	
	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-5 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		8			
	1					-200%=45 LL=26 PI=11	15			
0.5	2			LOOSE BROWN CLAYEY SAND			18		5	●
	3				SC A-6		19			
1	4						18			
				LOOSE RED AND BROWN CLAYEY SAND						
1.5	5					-200%=47	17		5	●
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-6 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		4			
0.5	1					-200%=42 LL=27 PI=11	16			
	2			LOOSE BROWN CLAYEY SAND			19		4	
1	3				SC A-6		18			
	4			MEDIUM DENSE GRAY AND BROWN CLAYEY SAND			15			
1.5	5					-200%=42	15		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-7 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0								
				LOOSE GRAY SILTY FINE SAND	SM A-2-4		13		
0.5	1					-200%=48	18		
	2			LOOSE BROWN CLAYEY SAND			20	4	
1	3				SC A-6		20		
	4			LOOSE RED AND BROWN CLAYEY SAND			15		
1.5	5					-200%=37 LL=29 PI=15	16	6	
2	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-8 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		10		
0.5	1			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=34 LL=23 PI=12	13		
	2			LOOSE BROWN CLAYEY SAND			15	4	
1	3			LOOSE BROWN AND RED CLAYEY SAND	SC A-6		17		
1.5	4						16		
	5			MEDIUM DENSE BROWN AND RED CLAYEY SAND	SC A-6	-200%=49	17	11	
2	6								
	7								

Wc (%) scale: 10 20 30 40 60
N-Value* scale: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-9 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY CLAYEY FINE SAND	SM A-2-4		4			
0.5	1			LOOSE GRAY CLAYEY FINE SAND	SC A-2-6	-200%=34 LL=17 PI=11	8			
1	2			LOOSE BROWN CLAYEY SAND	SC A-6		13		6	
	3						14			
1.5	4						15			
	5			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=40	16		9	
2	6									
	7									

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Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-10 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		18		
0.5	1					-200%=30	9		
	2			MEDIUM DENSE GRAY CLAYEY FINE SAND	SC A-2-6		7	10	
1	3						33		
	4			FIRM RED AND GRAY SANDY CLAY	CL A-7-6		24		
1.5	5					-200%=61 LL=46 PI=21	30	3	
2	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-11 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0						10	20 30 40 60		10	20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9				
0.5	1					-200%=35 LL=36 PI=17	10				
	2			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6		9		11	●	
1	3						5				
1.5	4			LOOSE BROWN CLAYEY SAND	SC A-6		10				
	5					-200%=44	11		6	●	
2	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-12 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		8	10 20 30 40 60		10	20 30 40 60 80
0.5	1					-200%=48	16				
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		16		10		
1	3						16				
1.5	4			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6		25				
	5					-200%=63 LL=43 PI=20	25		13		
2	6										
	7										

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Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-13 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		11			
	1					-200%=42 LL=23 PI=11	14			
0.5				LOOSE BROWN CLAYEY SAND	SC A-6					
	2						8		6	
	3			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		9			
1	4					-200%=32	9			
1.5	5			LOOSE BROWN CLAYEY SAND	SC A-6		17		8	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-14 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0							10 20 30 40 60			10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		8				
0.5	1						17				
	2			VERY STIFF RED AND BROWN SANDY CLAY	CL A-7-6	-200%=65 LL=46 PI=18	24		13	●	
1	3						20				
	4			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		20				
1.5	5			MEDIUM DENSE RED AND BROWN CLAYEY SAND		-200%=46	17		13	●	
	6										
2	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-15 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9		
0.5	1					-200%=48 LL=27 PI=11	16		
	2						17	11	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		17		
	4						19		
1.5	5					-200%=49	18	11	
2	6								
	7								

Wc (%): 10 20 30 40 60

N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-16 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⌭ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9			
0.5	1						18			
	2					-200%=37 LL=39 PI=19	14		13	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		12			
	4						11			
1.5	5			VERY STIFF BROWN SANDY CLAY	CL A-7-6	-200%=52	19		13	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-17 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		10			
0.5	1			LOOSE ORANGE CLAYEY SAND	SC A-6	-200%=49 LL=17 PI=11	15			
	2						20		3	
1	3						21			
1.5	4			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	13			
	5			LOOSE BROWN CLAYEY SAND	SC A-6		20		3	
2	6									
	7									

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-18 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		9			
0.5	1					-200%=49	17			
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		13	
1	3						22			
1.5	4			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6		24			
	5					-200%=79 LL=42 PI=21	22		13	
2	6									
	7									

Wc (%) scale: 10 20 30 40 60

N-Value* scale: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-19 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⊂ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
							8			
	1					-200%=26 LL=18 PI=6	9			
0.5	2									
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		12		3	
1	3						11			
	4						11			
1.5	5			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	14		4	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-20 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY SILTY FINE SAND	SM A-2-4		9			
0.5	1					-200%=37 LL=25 PI=13	12			
	2			LOOSE ORANGE CLAYEY SAND	SC A-6		15		3	
1	3						16			
	4			VERY STIFF BROWN SANDY CLAY	CL A-7-6		21			
1.5	5					-200%=80	25		13	
	6									
2	7									

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-21 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=21	6	5	
0.5	1			LOOSE GRAY SILTY FINE SAND			7		
1	2			LOOSE BROWN SILTY FINE SAND			10		
1.5	3						9		
2	4						10		
	5					-200%=21 LL=22 PI=7	8	8	
	6								
	7								

Wc (%): 10 20 30 40 60

N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-22 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		5	10 20 30 40 60		10	20 30 40 60 80
0.5	1			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	8				
1	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		11		10		
1.5	3						11				
2	4						10				
	5					-200%=39 LL=27 PI=13	10		13		
	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-23 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		2			
0.5	1					-200%=46 LL=29 PI=15	14			
	2						12		8	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		12			
	4						12			
1.5	5					-200%=43	12		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-24 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⊂ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=26	10			
0.5	1						8			
	2						15		5	
1	3			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		14			
	4						13			
1.5	5			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=30 LL=35 PI=20	14		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

APPENDIX B
SOIL CLASSIFICATION DATA

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-1

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	13												SM	A-2-4	1	MEDIUM DENSE GRAY AND BROWN SILTY FINE SAND
1.0 - 1.5	18	100	100	100	98	90	71	43					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	19											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	22												CL	A-7-6	4	STIFF BROWN SANDY CLAY
4.0 - 4.5	23												CL	A-7-6	4	STIFF BROWN SANDY CLAY
5.0 - 5.5	22	100	100	100	99	92	75	51	42	25		11	CL	A-7-6	4	STIFF BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-2

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	8	100	100	98	91	79	56	26					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0 - 2.5	13											5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	24												CL	A-7-6	4	FIRM BROWN SANDY CLAY
5.0 - 5.5	22	100	100	100	98	93	79	53	41	20		5	CL	A-7-6	4	FIRM BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-3 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	11												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0 - 1.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	16	100	100	100	98	91	75	48	29	14		8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	98	91	75	48				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-4

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	5												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	12	100	100	100	98	90	72	45	24	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	15											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	14	100	100	100	98	90	70	40				8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-5

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	15	100	100	100	98	92	73	45	26	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	18											5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	18												SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND
5.0 - 5.5	17	100	100	100	99	94	77	47				5	SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-6 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	16	100	100	100	95	92	71	42	27	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	19											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
5.0 - 5.5	15	100	100	99	96	89	70	42				11	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-7

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	13												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	18	100	100	100	99	93	75	48					SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	20											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	20												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	96	67	48	37	29	15		6	SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-8 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	13	100	100	99	98	90	70	34	23	12			SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
2.0 - 2.5	15											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	17												SC	A-6	3	LOOSE BROWN AND RED CLAYEY SAND
4.0 - 4.5	16												SC	A-6	3	LOOSE BROWN AND RED CLAYEY SAND
5.0 - 5.5	17	100	100	98	96	89	72	49				11	SC	A-6	3	MEDIUM DENSE BROWN AND RED CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-9

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	4												SM	A-2-4	1	LOOSE GRAY CLAYEY FINE SAND
1.0 - 1.5	8	100	100	100	98	91	67	34	17	11			SC	A-2-6	2	LOOSE GRAY CLAYEY FINE SAND
2.0 - 2.5	13											6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	98	91	73	40				9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-10

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	18												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	9	100	100	100	97	88	63	30					SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
2.0 - 2.5	7											10	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
3.0 - 3.5	33												CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY
4.0 - 4.5	24												CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY
5.0 - 5.5	30	100	100	99	98	93	79	61	46	21		3	CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-11

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	10	100	100	100	98	92	71	35	36	17			SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0 - 2.5	9											11	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
3.0 - 3.5	5												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
4.0 - 4.5	10												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	11	100	100	100	98	91	68	44				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-12 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	16	100	100	99	98	93	76	48					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	16											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	25												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
5.0 - 5.5	25	100	100	90	86	83	78	63	43	20		13	CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-13

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	14	100	100	100	99	96	81	42	23	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	8											6	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0 - 3.5	9												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0 - 4.5	9	100	100	100	98	91	65	32					SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	17											8	SC	A-6	3	LOOSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-14

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	17												CL	A-7-6	4	VERY STIFF RED AND BROWN SANDY CLAY
2.0 - 2.5	24	100	100	100	99	96	86	65	46	18		13	CL	A-7-6	4	VERY STIFF RED AND BROWN SANDY CLAY
3.0 - 3.5	20												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	20												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	17	100	100	100	97	91	73	46				13	SC	A-6	3	MEDIUM DENSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-15

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	16	100	100	100	98	92	76	48	27	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	17											11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	17												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	19												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	18	100	100	100	98	93	77	49				11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-16

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	14	100	100	99	70	42	39	37	39	19		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	11												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	19	100	100	100	100	65	55	52				13	CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-17

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	15	100	100	98	96	91	71	49	17	11			SC	A-6	3	LOOSE ORANGE CLAYEY SAND
2.0 - 2.5	20											3	SC	A-6	3	LOOSE ORANGE CLAYEY SAND
3.0 - 3.5	21												SC	A-6	3	LOOSE ORANGE CLAYEY SAND
4.0 - 4.5	13	100	100	100	96	84	69	32					SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	20											3	SC	A-6	3	LOOSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-18

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0 - 1.5	17	100	100	99	93	82	76	49					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	18											13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	22												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
4.0 - 4.5	24												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
5.0 - 5.5	22	100	100	100	100	99	98	79	42	21		13	CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-19 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	9	100	100	98	89	61	44	26	18	6			SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0 - 2.5	12											3	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0 - 3.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
4.0 - 4.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
5.0 - 5.5	14	100	100	99	91	68	50	32				4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-20

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	12	100	100	99	90	68	52	37	25	13			SC	A-6	3	LOOSE ORANGE CLAYEY SAND
2.0 - 2.5	15											3	SC	A-6	3	LOOSE ORANGE CLAYEY SAND
3.0 - 3.5	16												SC	A-6	3	LOOSE ORANGE CLAYEY SAND
4.0 - 4.5	21												CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY
5.0 - 5.5	25	100	100	100	99	97	93	80				13	CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-21 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	6												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	7	100	100	99	93	62	37	21					SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
2.0 - 2.5	10											5	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0 - 3.5	9												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
4.0 - 4.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
5.0 - 5.5	8	100	100	97	72	37	23	21	22	7		8	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-22

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	5												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	8	100	100	98	90	74	56	32					SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0 - 2.5	11											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	11												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	10												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	10	100	100	97	87	71	58	39	27	13		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-23 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	2												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	14	100	100	99	97	92	73	46	29	15			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	12											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	12	100	100	99	97	91	72	43				11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

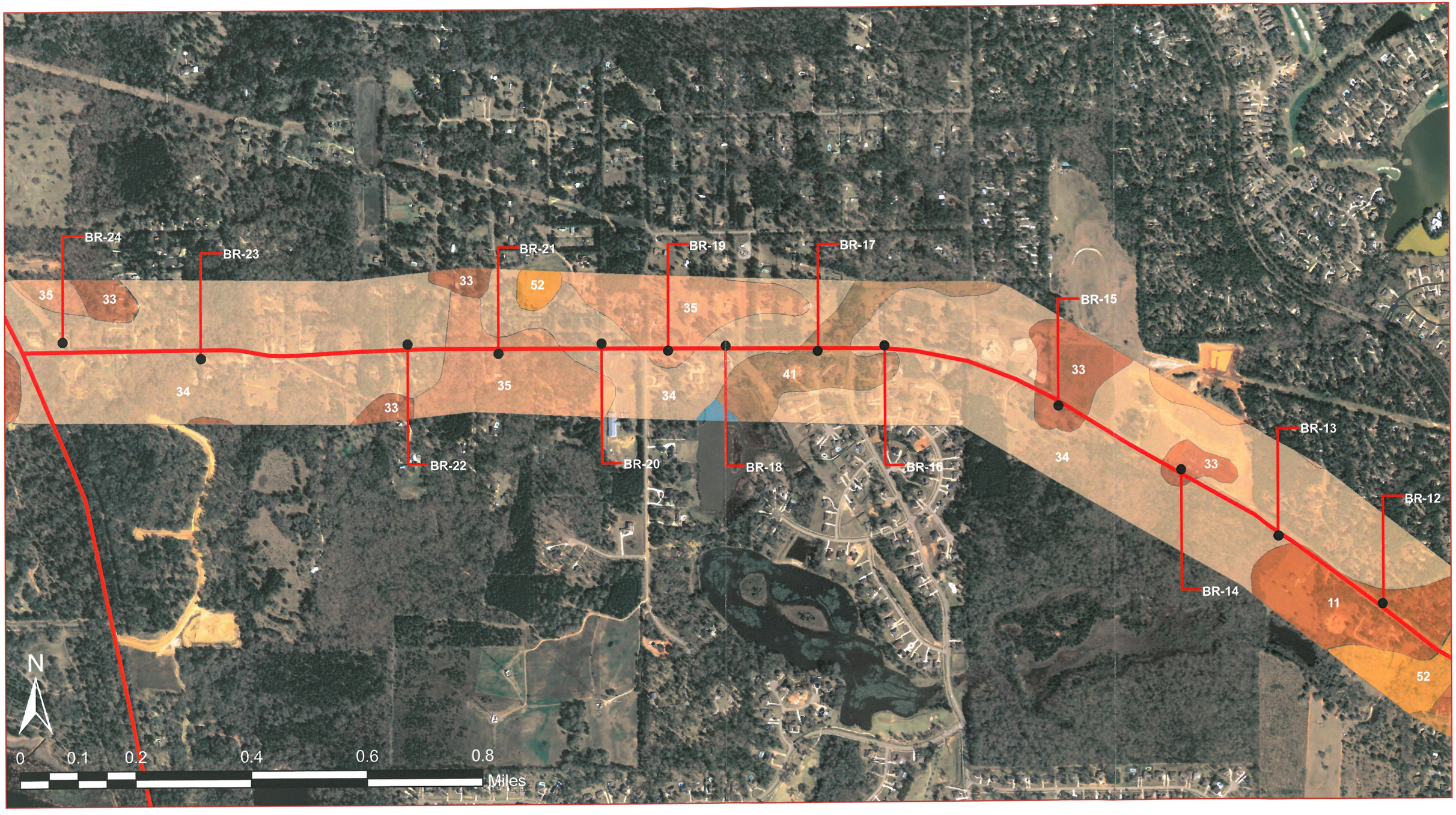
Boring: BR-24

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	8	100	100	99	94	65	45	26					SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
2.0 - 2.5	15											5	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0 - 3.5	14												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0 - 4.5	13												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	14	100	100	100	99	92	71	30	35	20		11	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND

EGS

APPENDIX C
USDA SOIL SURVEY



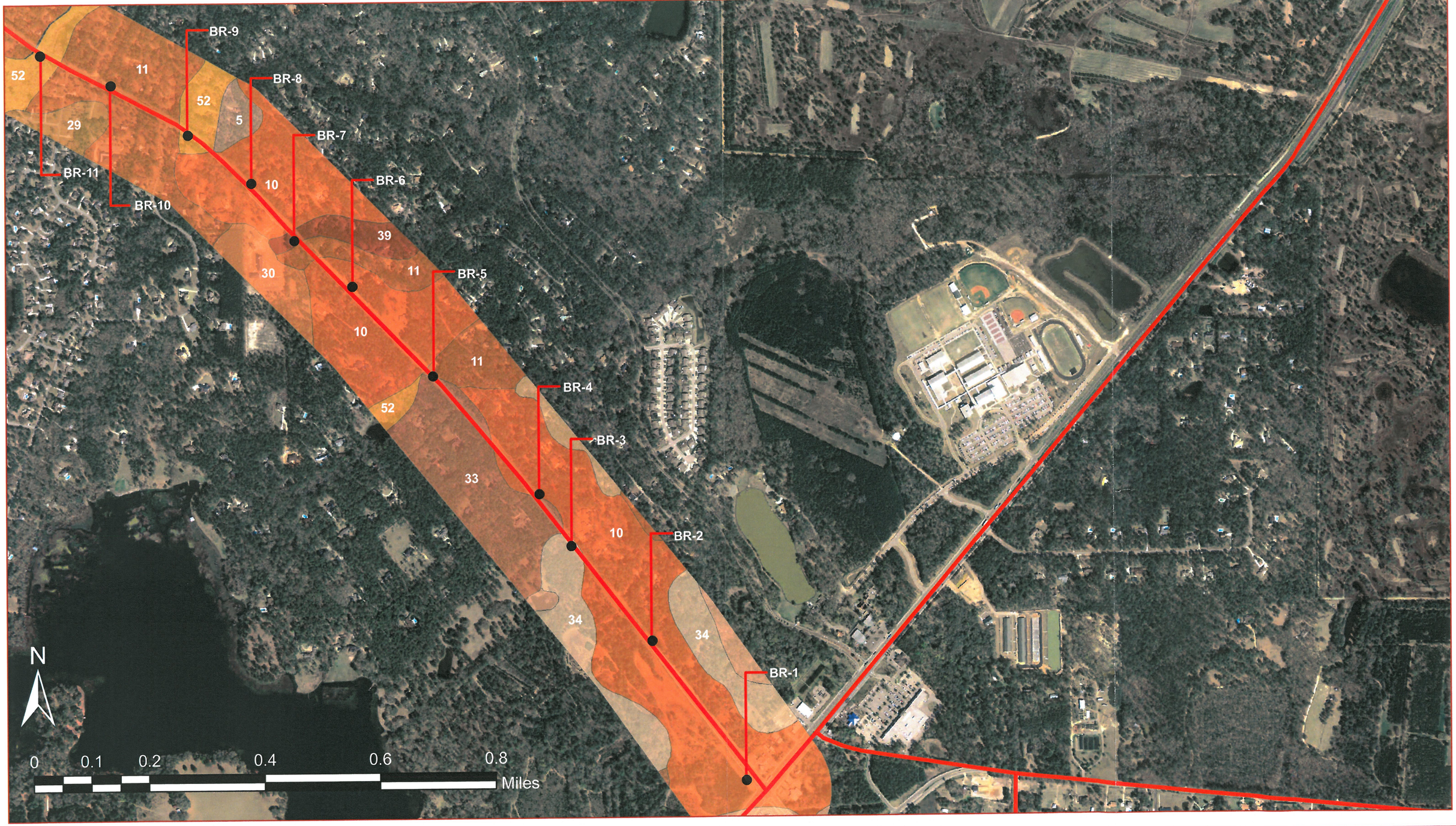
- SOIL BORING

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: C-1



● - SOIL BORING

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: C-2

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
8---------- Chipley	0-15	Fine sand-------	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
	15-80	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
9---------- Dorovan	0-5	Mucky peat------	Pt	---	0	---	---	---	---	---	---
	5-65	Muck------------	Pt	---	0	---	---	---	---	---	---
	65-80	Sand, loamy sand, loam.	SP-SM, SM-SC, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
10, 11---------- Dothan	0-13	Loamy fine sand	SM	A-2	0	95-100	92-100	60-80	13-30	---	NP
	13-46	Sandy clay loam, sandy loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	92-100	68-90	23-45	<40	NP-15
	46-75	Sandy clay loam, sandy clay.	SM-SC, SC, SM	A-2, A-4, A-6, A-7	0	95-100	92-100	70-95	30-50	25-45	4-18
12, 13, 14--------- Faceville	0-13	Sandy loam------	SM, SM-SC	A-2, A-4	0	90-100	85-100	72-97	17-38	<25	NP-5
	13-80	Sandy clay, clay, clay loam.	CL, SC	A-6, A-7	0	98-100	95-100	75-99	45-72	25-43	11-23
15---------- Foxworth	0-46	Sand------------	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	46-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	50-100	1-12	---	NP
16, 17---------- Fuquay	0-37	Fine sand-------	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-20	---	NP
	37-64	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	60-80	23-45	<35	NP-18
	64-80	Sandy clay loam	SC, CL	A-2, A-4, A-6	0	95-100	90-100	60-93	28-55	20-39	8-25
18, 19---------- Kershaw	0-80	Sand------------	SP, SP-SM	A-2, A-3	0	98-100	98-100	50-80	1-7	---	NP
20:* Kershaw---------- Urban land.	0-80	Sand------------	SP, SP-SM	A-2, A-3	0	98-100	98-100	50-80	1-7	---	NP
21---------- Lakeland	0-78	Sand------------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
	78-91	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
22---------- Leefield	0-36	Loamy sand------	SM, SW-SM, SP-SM	A-2	0	98-100	95-100	65-95	10-20	---	NP
	36-51	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	93-100	65-95	20-40	<40	NP-16
	51-80	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	95-100	65-90	20-40	<40	NP-20

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
23---------- Leon	0-25	Sand----------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	25-41	Sand, fine sand	SM, SP-SM, SP	A-3, A-2-4	0	100	100	80-100	3-20	---	NP
	41-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
24, 25---------- Lucy	0-30	Fine sand-------	SM, SP-SM	A-2	0	98-100	95-100	50-87	10-30	---	NP
	30-36	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	97-100	95-100	55-95	15-50	10-30	NP-15
	36-80	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, SM	A-2, A-6, A-4	0	100	95-100	60-95	20-50	20-40	5-20
26---------- Lutterloh	0-59	Fine sand-------	SP, SP-SM SM	A-3, A-2-4	0	100	100	85-95	2-15	---	NP
	59-71	Fine sandy loam, very fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	100	100	85-95	20-40	<35	NP-20
	71-80	Sandy clay loam, sandy clay.	SC, CL, CH	A-6, A-7	0	100	100	90-100	40-60	35-70	20-42
27---------- Lynchburg	0-18	Fine sandy loam	SM, ML	A-2, A-4	0	92-100	90-100	75-100	25-65	<30	NP-7
	18-65	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	Variable--------	---	---	---	---	---	---	---	---	---
28*---------- Meggett	0-12	Very fine sandy loam	SM	A-2, A-4	0	100	90-100	85-100	13-41	---	NP
	12-50	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	0	100	90-100	85-100	51-90	30-70	20-40
	50-80	Sandy clay, clay loam, sandy clay loam.	CL, SC, SM	A-4, A-6, A-2	0	90-100	65-100	50-100	40-60	<40	NP-25
29, 30---------- Norfolk	0-8	Loamy fine sand	SM	A-2	0	95-100	92-100	50-91	13-30	<20	NP
	8-58	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-38	4-15
	58-80	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6	0	100	98-100	65-98	36-72	20-45	4-22
31---------- Norfolk	0-7	Loamy sand------	SM	A-2-4	0	95-100	95-100	85-95	13-25	---	NP
	7-14	Sandy loam------	SM, SM-SC	A-2-4	0	95-100	95-100	85-95	13-35	<23	NP-7
	14-64	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	95-100	95-100	85-95	30-55	20-40	4-20
	64-80	Sandy clay, clay	CH	A-7	0	95-100	95-100	85-100	51-100	50-100	23-60

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
32----------	0-29	Sand----------	SM, SP-SM	A-2, A-3	0	100	95-100	75-100	8-35	---	NP
Ocilla	29-80	Sandy loam, sandy clay loam.	SM, CL, SC	A-2, A-4, A-6	0	100	95-100	80-100	30-55	<40	NP-18
33, 34, 35----------	0-10	Fine sandy loam	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
Orangeburg	10-80	Sandy clay loam	SC, CL	A-6, A-4	0	98-100	95-100	71-91	38-55	22-40	8-19
36:*											
Orangeburg--------	0-10	Fine sandy loam	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
	10-80	Sandy clay loam	SC, CL	A-6, A-4	0	98-100	95-100	71-91	38-55	22-40	8-19
Urban land.											
37----------	0-10	Sand----------	SP, SP-SM	A-3	0	100	100	90-100	3-8	---	NP
Ortega	10-99	Fine sand, sand	SP, SP-SM	A-3	0	100	100	90-100	2-7	---	NP
38:*											
Pamlico----------	0-32	Muck----------	Pt	---	0	---	---	---	---	---	---
	32-80	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	---	NP
Dorovan----------	0-5	Mucky peat------	Pt	---	0	---	---	---	---	---	---
	5-65	Muck----------	Pt	---	0	---	---	---	---	---	---
	65-80	Sand, loamy sand, loam.	SP-SM, SM-SC, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
39----------	0-26	Fine sand-------	SM	A-2	0	100	95-100	75-90	15-30	---	NP
Pelham	26-80	Sandy clay loam, sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	65-90	30-50	15-30	2-12
40.*											
Pits											
41----------	0-61	Fine sand-------	SM, SP-SM	A-2-4, A-3	0	100	100	75-96	5-26	---	NP
Plummer	61-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2-4, A-2-6	0	100	97-100	76-96	26-35	<31	NP-14
42----------	0-60	Mucky fine sand	SM, SP-SM	A-2-4, A-3	0	100	100	75-96	5-26	---	NP
Plummer	60-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2-4, A-2-6	0	100	97-100	76-96	26-35	<31	NP-14
43, 44*----------	0-23	Loamy fine sand	SM, SP-SM	A-2, A-3	0	95-100	95-100	50-80	5-35	<25	NP
Rutlege	23-82	Sand, loamy sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	0	95-100	95-100	50-80	2-25	<20	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
45---------- Sapelo	0-14	Fine sand-------	SM, SP, SP-SM	A-2, A-3	0	100	100	90-100	4-20	---	NP
	14-26	Fine sand, sand	SM, SP-SM	A-2, A-3	0	100	100	95-100	8-20	---	NP
	26-43	Fine sand, sand	SM, SP, SP-SM	A-2, A-3	0	100	100	90-100	4-20	---	NP
	43-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	90-100	20-50	<40	NP-20
46---------- Surrency	0-36	Loamy sand------	SM	A-2	0	100	95-100	50-75	15-26	---	NP
	36-65	Sandy clay loam	SM, SC, SM-SC	A-2, A-6, A-4	---	100	95-100	80-98	30-44	<34	NP-21
47---------- Talquin	0-25	Fine sand-------	SP, SM, SP-SM	A-3, A-2-4	0	100	100	80-100	2-15	---	NP
	25-37	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	80-100	5-20	---	NP
	37-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
48---------- Troup	0-44	Fine sand-------	SM	A-2, A-4	0	100	100	65-90	15-40	---	NP
	44-80	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2	0	95-100	95-100	70-90	24-55	19-30	4-10
49.* Urban land											
50, 51---------- Wagram	0-31	Loamy fine sand	SM	A-2	0	100	98-100	50-85	15-35	---	NP
	31-62	Sandy clay loam, sandy loam.	SC	A-2, A-4, A-6	0	100	98-100	80-95	31-49	21-40	8-25
52---------- Yonges	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	90-100	25-55	<30	NP-7
	9-71	Sandy clay loam, clay loam.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	0	100	100	95-100	40-70	25-45	6-25
	71-80	Fine sandy loam, sandy clay loam.	CL, ML, SC, SM	A-4, A-6	0	100	100	80-100	40-65	20-40	3-22

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the text explain terms such as "rare," "brief," "apparent," and "perched." Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
1---------- Albany	C	---	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	---	High------	High.
2:* Albany---------- Urban land.	C	---	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	---	High------	High.
3---------- Alpin	A	None--------	---	---	>6.0	---	---	>90	---	---	---	Low-------	High.
4.* Arents													
5---------- Blanton	A	None--------	---	---	5.0-6.0	Perched	Jan-Apr	>60	---	---	---	High------	High.
6---------- Bonifay	A	None--------	---	---	4.0-5.0	Perched	Jan-Feb	>60	---	---	---	Low-------	High.
7---------- Chaires	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High------	High.
8---------- Chipley	C	None--------	---	---	2.0-3.0	Apparent	Jun-Sep	>60	---	---	---	Low-------	High.
9**---------- Dorovan	D	Frequent----	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	---	4-8	75	High------	High.
10, 11---------- Dothan	B	None--------	---	---	3.5-4.0	Perched	Jan-Apr	>60	---	---	---	Moderate	Moderate
12, 13, 14-------- Faceville	B	None--------	---	---	>6.0	---	---	>60	---	---	---	Low-------	Moderate
15---------- Foxworth	A	None--------	---	---	3.5-6.0	Apparent	Jun-Oct	>60	---	---	---	Low-------	High.
16, 17---------- Fuquay	B	None--------	---	---	2.5-4.0	Perched	Jan-Mar	>60	---	---	---	Low-------	High.
18, 19---------- Kershaw	A	None--------	---	---	>6.0	---	---	>60	---	---	---	Low-------	High.

See footnotes at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
20:* Kershaw	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
Urban land.													
21--- Lakeland	A	None	---	---	>6.0	---	---	>72	---	---	---	Low	Moderate.
22--- Leefield	C	None	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	Moderate	High.
23--- Leon	A/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	High.
24, 25--- Lucy	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
26--- Lutterloh	C	None	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	High	Moderate.
27--- Lynchburg	B/D	None	---	---	0.5-1.5	Apparent	Nov-Apr	>60	---	---	---	High	High.
28*--- Meggett	D	Frequent	Long	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High	Moderate.
29, 30--- Norfolk	B	None	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	---	---	Moderate	High.
31--- Norfolk	B	None	---	---	5.0-6.0	Perched	Jan-Apr	>60	---	---	---	Moderate	High.
32--- Ocilla	C	None	---	---	1.0-2.5	Apparent	Dec-Apr	>60	---	---	---	High	Moderate.
33, 34, 35--- Orangeburg	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.
36:* Orangeburg	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.
Urban land.													

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
37--- Ortega	A	None---	---	---	3.5-5.0	Apparent	Jun-Jan	>60	---	---	---	Low---	High.
38:*													
Pamlico**---	D	Frequent---	Very long	Nov-Jun	+1-1.0	Apparent	Nov-Jul	>60	---	4-12	10-36	High---	High.
Dorovan**---	D	Frequent---	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	---	4-8	75	High---	High.
39--- Pelham	B/D	None---	Brief---	Dec-Mar	0.5-1.5	Apparent	Jan-Apr	>60	---	---	---	High---	High.
40.* Pits													
41--- Plummer	B/D	None---	---	---	0-1.5	Apparent	Dec-Jul	>60	---	---	---	Moderate	High.
42**--- Plummer	B/D	None---	---	---	+2-1.5	Apparent	Dec-Jul	>60	---	---	---	Moderate	High.
43, 44*--- Rutlege	D	Common---	Brief---	Dec-May	0-1.0	Apparent	Dec-May	>60	---	---	---	High---	High.
45--- Sapelo	D	None---	---	---	1.5-2.5	Apparent	Nov-Apr	>60	---	---	---	High---	High.
46--- Surrency	D	Common---	Very long	Dec-Mar	0-0.5	Apparent	Dec-Apr	>60	---	---	---	High---	High.
47--- Talquin	B/D	None---	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High---	High.
48--- Troup	A	None---	---	---	>6.0	---	---	>60	---	---	---	Low---	Moderate.
49.* Urban land													
50, 51--- Wagram	A	None---	---	---	>6.0	---	---	>60	---	---	---	Low---	High.
52--- Yonges	D	Frequent---	Long---	Nov-Mar	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High---	Moderate.

* See description of the map unit for composition and behavior characteristics of the map unit.

** In the "High water table--Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

PRELIMINARY INFILTRATION INVESTIGATION

BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

Prepared For:

REYNOLDS, SMITH & HILLS, INC.
1701 HERMITAGE BOULEVARD
SUITE 101
TALLAHASSEE, FLORIDA 32308

Prepared By:

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.
3154 ELIZA ROAD
TALLAHASSEE, FLORIDA 32308
(850) 386-1253

June 2011
23-59-10-01

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

June 6, 2011

EGS File Number: 23-59-10-01

Reynolds, Smith & Hills, Inc.
1701 Hermitage Blvd.
Suite 101
Tallahassee, FL 32308

ATTN: Nicholi Arnio, P.E.
Project Manager

SUBJECT: **Results of Preliminary Infiltration Investigation**
Bannerman Road Corridor Study
Leon County, Florida

Dear Nicholi:

Environmental and Geotechnical Specialists, Inc. (**EGS**) has completed the Preliminary Infiltration Investigation, as authorized by **Reynolds, Smith & Hills, Inc. (RS&H),** for the Bannerman Road Corridor Study. The project segment considered in the investigation begins near Reynolds Drive and ends at Thomasville Road. The data presented in the report will likely not apply for any other segment.

This Report includes a summary of the preliminary infiltration investigation conducted for this project, a synopsis of field and laboratory test data, both measured and estimated "normal" seasonal high groundwater results, likely karst features of the infiltration areas, and preliminary infiltration rates based on the materials encountered.

PROJECT AREA AND CONDITIONS

The project corridor is located along Bannerman Road beginning at Reynolds Drive and ending at Thomasville Road in Tallahassee, Florida. A Site Location Map has been provided as **Figure 1.**

A review of the United States Geological Survey's (**USGS**) Topographic Map of the project area indicates the topography of the project area consists of rolling hills varying between EL 200 feet and EL 235 feet. The drainage appears to be routed through existing swales and low lying wetland areas. Permanent groundwater appears to be around EL 185 feet. A copy of the **USGS** Topographic Map of the project area has been included as **Figure 2.**

The majority of the project area site is surrounded by woodlands and commercial/residential developments. The existing roadway is mostly two (2) lanes, but increases to four (4) lanes when approaching Thomasville Road from the west. The vegetation in this area is composed of ornamental landscaping and trees. Photographs of the project area have been provided as **Figures 3A** thru **3D.**

SCOPE OF SERVICES

The Scope of Services authorized by the **RS&H, Inc.** for this project consisted of the following:

- Installing eighteen (18) standard penetration tests (**SPT**) soil borings to a depth of 25 feet;
- Testing representative soil samples for uniformity and classification;
- Evaluating the existing subsurface conditions;
- Measuring the depths to existing groundwater and estimating the depths to "normal" seasonal high groundwater;
- Reporting likely Karst features located within the project infiltration areas;
- Developing "preliminary" permeability rates for each soil strata encountered; and;
- Preparation of this Report.

SUBSURFACE INVESTIGATION

The subsurface investigation outlined in this Report was conducted in May 2011 with Matt Monteith, E.I., serving as the Staff Engineer and Myron L. Hayden, Ph.D., P.E., serving as Principal Geotechnical Engineer.

The eighteen (18) Soil Borings installed for this study, labeled **PB-1** to **PB-18**, were located in the field using a Trimble GeoExplorer 2008 series Global Positioning Satellite (**GPS**) hand held unit. The boring locations were determined by **RS&H, Inc**. Several of the borings were not installed at the original location requested due to overhead power lines and buried utilities. A Boring Location Map has been included as **Figure 4A** to **4F** with detailed location information for each soil boring provided in **TABLE 1**.

To provide higher accuracy in water level measurements, **EGS** installed the borings without the use of drilling fluid. The borings were advanced using three (3) inch diameter casing for the entire boring depth. The depth of water encountered was measured using a Durham Geo Slope Water Level Indicator.

To reduce the chance of impacting a buried utility, **EGS installed** the first seven and one-half (7 ½) feet of each soil boring using a hand auger. To evaluate the uniformity and relative density of the subsoils, Static Hand Cone Penetrometer Index (**CPI**) tests were conducted at depths of two and one-half (2 ½), and five (5) feet in each soil boring.

Below a depth of seven and one-half (7 ½) feet the soil borings were installed using **EGS's** BK 51 HD, CME 550X, or CME 75 rotary drill with Standard Penetration Tests (**SPT**) conducted on two and one-half (2 ½) feet intervals to the boring termination depth.

To facilitate uniformity, the **CPI** test values have been converted to equivalent **SPT "N"** values using the correlation **N = "C"/4**. The **SPTs** were conducted in accordance with ASTM D 1586. All **SPT** samples were classified in the field by **EGS** personnel, sealed, and transported to **EGS's** laboratory for additional testing. The laboratory tests included water contents, grain-size distributions, and Atterberg limits. All soil samples were classified with respect to the Unified Soil Classification (**UNIFIED**) System and the American Association of State Highway and Transportation Officials (**AASHTO**) Soil Classification System.

The results of the laboratory tests are summarized in the Report of Tests provided in **APPENDIX A,** Soil Boring Logs provided in **APPENDIX B,** and Soil Classification Data provided in **APPENDIX C**.

SUBSURFACE CONDITIONS

Soils

As can be seen in the Soil Profiles provided as **Figure 5A** to **5B,** and the Report of Core Borings provided in **APPENDIX A**, the following materials were encountered:

- Silty Fine Sand **(SM / A-2-4 / STRATUM 1)**
- Clayey Fine Sand **(SC / A-2-6 / STRATUM 2)**
- Clayey Sand **(SC / A-6 / STRATUM 3)**
- Sandy Clay **(CL / A-6 / STRATUM 4)**
- Sandy to Highly Plastic Clay **(CL/CH / A-7-6 / STRATUM 5)**

In general, the ground surface was found to be covered with a thin layer of Silty to Clayey Fine Sand followed by Clayey Sand, Sandy Clay, and Highly Plastic Clay. It should be noted that impermeable Clay was encountered within the first (10) feet of Soil Borings **PB-1, PB-3, PB-5, PB-6, PB-7, PB-10, PB-11,** and **PB-18**. Detailed information on the subsurface conditions at the locations of these Soil Borings is shown in the Soil Profiles provided as **Figures 5A** to **5B** and the Report of Core Borings provided in **APPENDIX A**.

USDA Soil Survey

According to the United States Department of Agriculture (**USDA**) Soil Survey for Leon County, the soils in the project area are primarily *Dothan Loamy Fine Sand, Orangeburg Fine Sandy Loam, Pelham Fine Sand,* and *Yonges Fine Sandy Loam.* Based on the soil borings installed for this study, **EGS concurs** with the information provided in the **USDA** Soil Survey. For detailed information pertaining to the **USDA** Soil Survey, please find **APPENDIX D.**

Groundwater

Groundwater encountered at the time of drilling has been summarized in **TABLE 1**. As can be seen in **TABLE 1**, groundwater was not encountered in most borings. **EGS believes** that the groundwater which was encountered is perched atop an impermeable clay layer. It should be noted that the field investigation was conducted during a period of little to no rainfall. Therefore, the current permanent water table is likely lower than normal. In a normal condition, **EGS believes** that the average permanent groundwater elevation in this area is likely near EL 180 to EL 185 feet.

Based on the soil samples collected and review of general subsurface conditions, the "normal" seasonal high groundwater elevation in the area of the soil borings is highly variable and is dependent on the infiltration characteristics of the subsurface. **EGS believes** the "normal" seasonal high groundwater level is likely in a "perched" condition across most of the project area. Detailed estimations of the estimated "normal" seasonal high groundwater elevations are provided in **TABLE 1**.

Karst Features

EGS reviewed the Tallahassee-Leon County GIS database for karst features in relation to the proposed infiltration areas. No likely karst features were identified at the locations of the proposed infiltration area. Based on the soil borings installed, **EGS does not believe** an "active" karst feature exists below the infiltration areas identified herein.

Permeability Estimates

Estimates of the permeability of each **STRATUM** have been provided in **TABLE 3** and shown in **Figure 5A** thru **5B**. The permeability estimates for each **STRATUM** were determined using the grain-size correlations and reviewing the **USDA** Soil Survey estimates. The permeability values provided are not infiltration rates since they do not include the effects of groundwater mounding, clogging with fines, or include a factor of safety. Copies of the Grain-Size Correlations are provided in **APPENDIX E**.

CLOSURE

The data and results presented in this Report are intended for the use of the **RS&H, Inc.** and **Leon County Department of Public Works** for the infiltration areas, identified herein. This Report is not intended for any other use and will likely not be applicable. The data and recommendations presented in this Report are based on the boring made at the specific location and depth noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, Environmental and Geotechnical Specialists, Inc. requests the opportunity to review the data and make any modifications to the design recommendations which may be appropriate.

Sincerely,

Environmental and Geotechnical Specialists, Inc.
Florida Certificate of Engineering Authorization Number 6222

6-6-11

Myron L. Hayden, Ph.D., P.E.
Principal Geotechnical Engineer
FL P.E. Number 34067

TABLES

TABLE 1
SOIL BORING AND GROUNDWATER DATA
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	GROUND ELEVATION [2]	STATIONING (FEET)	OFFSET FROM CONSTRUCTION CENTERLINE (FEET)	MEASURED GROUNDWATER [3]		ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER [4]		STATE PLANE COORDINATES		GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [5]			
											LATITUDE		LONGITUDE	
					DEPTH (FEET)	ELEVATION (FEET)	DEPTH (FEET)	ELEVATION (FEET)	NORTHING	EASTING	DEG(°)	MIN (')	DEG(°)	MIN (')
SOIL BORING LOCATIONS														
PB-1	25.0	--	13+00[A]	18.0 LEFT	> 25.0	--	2.0 [B]	--	574114.489	2050992.950	30	34.703	84	14.272
PB-2	25.0	214.5	165+50	40.0 LEFT	> 25.0	< 189.5	10.0 [B]	204.5	573744.977	2052257.319	30	34.641	84	14.031
PB-3	25.0	217.5	168+00	42.0 RIGHT	> 25.0	< 191.0	1.0 [B]	216.5	573518.040	2052404.290	30	34.604	84	14.003
PB-4	25.0	219.0	174+00	45.0 LEFT	> 25.0	< 194.0	1.0 [B]	218.0	573162.318	2052881.479	30	34.545	84	13.912
PB-5	25.0	208.5	177+50	47.0 LEFT	11.5 [B]	197.0	6.0 [B]	202.5	572919.555	2053119.025	30	34.505	84	13.867
PB-6	25.0	206.0	179+00	57.0 RIGHT	10.0 [B]	196.0	7.5 [B]	198.5	572735.591	2053150.615	30	34.474	84	13.861
PB-7	25.0	207.0	180+00	49.0 LEFT	> 25.0	< 182.0	7.5 [B]	199.5	572729.772	2053304.836	30	34.473	84	13.832
PB-8	25.0	221.0	183+75	51.0 LEFT	> 25.0	< 196.0	10.0 [B]	201.0	572469.956	2053558.792	30	34.430	84	13.783
PB-9	25.0	216.5	189+00	51.0 LEFT	18.7 [B]	197.8	12.5 [B]	204.0	572087.123	2053930.747	30	34.367	84	13.713
PB-10	25.0	211.5	192+75	38.0 RIGHT	> 25.0	< 186.5	6.0 [B]	205.5	571759.881	2054124.448	30	34.313	84	13.676
PB-11	25.0	213.0	196+00	49.0 LEFT	> 25.0	< 188.0	7.5 [B]	205.5	571581.276	2054419.136	30	34.283	84	13.619
PB-12	25.0	214.0	198+75	68.0 RIGHT	> 25.0	< 189.0	10.0 [B]	204.0	571306.196	2054523.464	30	34.238	84	13.600
PB-13	25.0	213.5	203+00	55.0 LEFT	> 25.0	< 188.5	10.0 [B]	203.5	571079.061	2054902.809	30	34.200	84	13.528
PB-14	25.0	215.0	206+00	34.0 RIGHT	> 25.0	< 190.0	7.5 [B]	207.5	570788.027	2055027.197	30	34.152	84	13.504
PB-15	25.0	215.0	208+00	41.0 LEFT	> 25.0	< 190.0	> 25.0	< 190.0	570676.807	2055209.063	30	34.134	84	13.470
PB-16	25.0	224.0	214+00	32.0 RIGHT	> 25.0	< 199.0	15.0 [B]	209.0	570161.817	2055520.003	30	34.049	84	13.411
PB-17	25.0	222.5	220+50	47.0 LEFT	> 25.0	< 197.5	15.0 [B]	207.5	569694.852	2055985.055	30	33.972	84	13.322
PB-18	25.0	234.0	229+00	40.0 LEFT	> 25.0	< 209.0	1.0 [B]	233.0	569027.257	2056504.117	30	33.861	84	13.223

NOTES:
1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. ELEVATIONS DETERMINED FROM PLANS PROVIDED BY REYNOLDS, SMITH, AND HILLS, INC.
3. 24 - HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
4. "NORMAL" SEASONAL HIGH GROUNDWATER ESTIMATED
5. GPS COORDINATES DETERMINED USING A TRIMBLE GEOEXPLORER XH HANDHELD UNIT
6. -- MEANS NOT DETERMINED.

A. STATION CORRESPONDS TO REYNOLDS DRIVE.
B. LIKELY IN A PERCHED CONDITION.

TABLE 2
USDA SOIL SURVEY DATA
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

BORING NUMBER(S)	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	MATERIAL CLASSIFICATION		DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
				UNIFIED	AASHTO	
PB-3, PB-4, PB-8, PB-9, PB-10, PB-13, PB-14, PB-15, PB-17, PB-18	10	0 - 5	LOAMY FINE SAND	SM	A-2	3.5
		5 - 13	LOAMY FINE SAND	SM	A-2	
		13 - 46	SANDY CLAY LOAM, SANDY LOAM	SC-SM, SM, SC	A-6, A-2, A-4	
		46 - 80	SANDY CLAY LOAM, SANDY CLAY	SC-SM, CL, SC	A-4, A-6, A-7, A-2	
PB-1, PB-6, PB-7	11	0 - 6	LOAMY FINE SAND	SM	A-2	3.5
		6 - 10	FINE SANDY LOAM, LOAMY FINE SAND	SM	A-2	
		10 - 64	SANDY CLAY LOAM, SANDY LOAM	SM, SC, SC-SM	A-4, A-6, A-2	
		64 - 80	SANDY CLAY LOAM, SANDY CLAY	CL, SC, SC-SM	A-4, A-6, A-7, A-2	
PB-11, PB-12	33	0 - 5	FINE SANDY LOAM	SM	A-2	--
		5 - 10	FINE SANDY LOAM	SM	A-2	
		10 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SC, CL	A-4, A-6	
PB-16	34	0 - 6	FINE SANDY LOAM	SM	A-2	--
		6 - 18	FINE SANDY LOAM	SM	A-2	
		18 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SC, CL	A-4, A-6	
PB-5	39	0 - 5	FINE SAND	SM	A-2	0.0
		5 - 26	FINE SAND	SM	A-2	
		26 - 80	SANDY CLAY LOAM, SANDY LOAM, FINE SANDY LOAM	SC, SC-SM, SM	A-2, A-4, A-6	
PB-2	52	0 - 5	FINE SANDY LOAM	SM, ML	A-4	0.0
		5 - 9	FINE SAND	SM	A-2-4	
		9 - 71	SANDY CLAY LOAM	CL-ML, SC, SC-SM, CL	A-7, A-4, A-6	
		71 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SM, CL, ML, SC	A-6, A-4	

NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA

2. SEE **APPENDIX D** FOR DETAILED USDA SOIL SURVEY DATA

TABLE 3
SOIL PERMEABILITY ESTIMATES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

STRATA NUMBER	MATERIAL CLASSIFICATION			SOIL PERMEABILITY VALUES		
	UNIFIED	AASHTO	USDA	LABORATORY GRAIN-SIZE ESTIMATE [1] (IN/HR)	USDA SOIL SURVEY VALUES [2] (IN/HR)	AVERAGE PERMEABILITY VALUE [3] (IN/HR)
1	SM	A-2-4	LOAMY SAND	0.7 - 2.1	2.0 - 6.0	**1.0**
2	SC	A-2-6	SANDY LOAM	0.4 - 0.7	0.5 - 2.0	**0.5**
3	SC	A-6	LOAM	0.1 - 0.2	0.2 - 0.5	**0.1**
4	CL	A-6	SANDY CLAY	< 0.01	--	**< 0.01**
5	CL/CH	A-7-6	PLASTIC CLAY	< 0.01	--	**< 0.01**

NOTES: 1. ESTIMATED FROM GRAIN-SIZE DISTRIBUTION CURVES.

2. REPORTED IN USDA SOIL SURVEY FOR LEON COUNTY.

3. RECOMMENDED PERMEABILITY VALUES SHOWN **ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES OR FACTOR OF SAFETY.**

4. - - MEANS NOT INCLUDED IN USDA SOIL SURVEY.

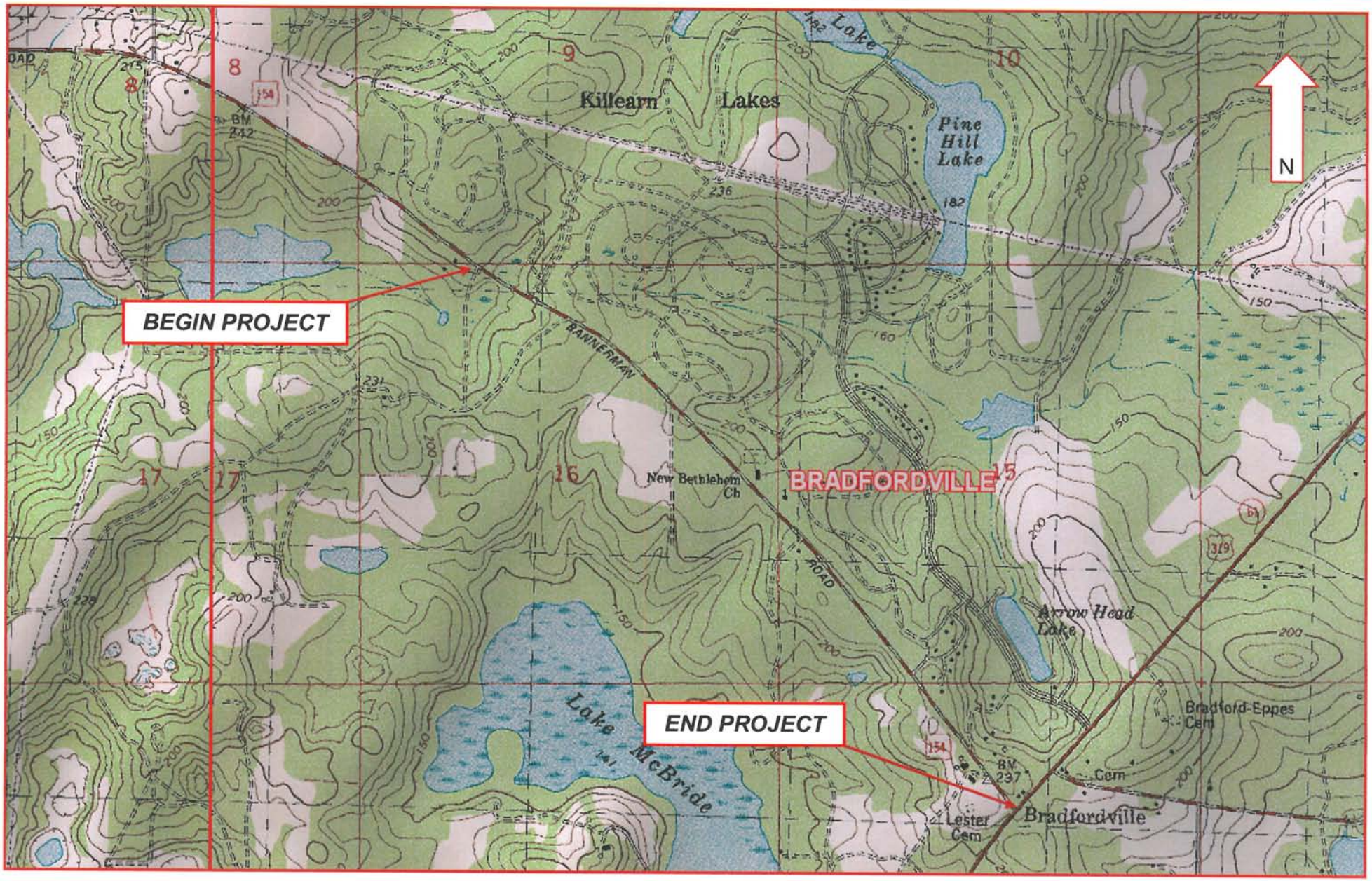
FIGURES

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH & HILLS, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | Fax #: (850) 385-8050

TITLE:
SITE LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: JUNE 2011	FIGURE NO.: 1



DRAWN: D. MILLS	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH & HILLS, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists

3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

TITLE:
USGS TOPOGRAPHIC SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: JUNE 2011	FIGURE NO.: 2

FIGURE 3A: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING NORTHWEST)

FIGURE 3B: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING SOUTHEAST)

FIGURE 3C: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING NORTHWEST)

FIGURE 3D: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING SOUTHEAST)

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 FIGURE NO.: 4A

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: R&SH, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011	FIGURE NO.: 4B

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4C

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4D

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: R&SH, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS **Environmental and Geotechnical Specialists, Inc.**
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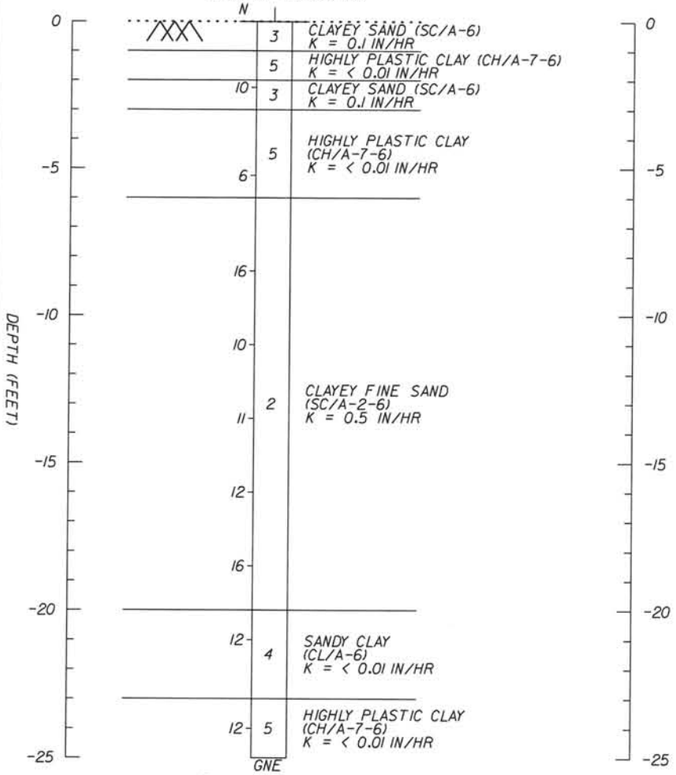
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011	FIGURE NO.: 4E

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4F

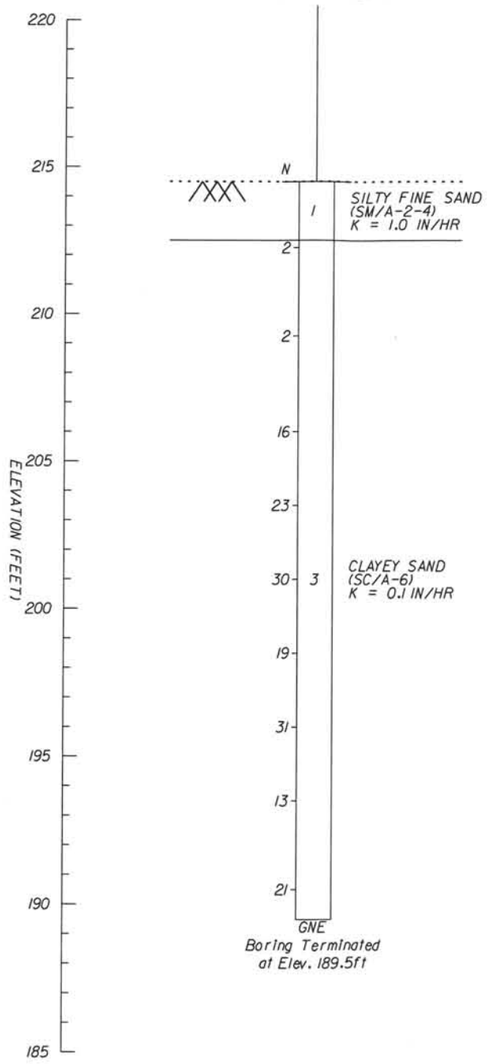
BOR # PB-1
NORTHING 574114.489
EASTING 2050992.95
ELEV. *
DATE 5/17/2011
DRILLER W. DUNLAP
HAMMER AUTOMATIC



Boring Terminated
at Depth 25ft

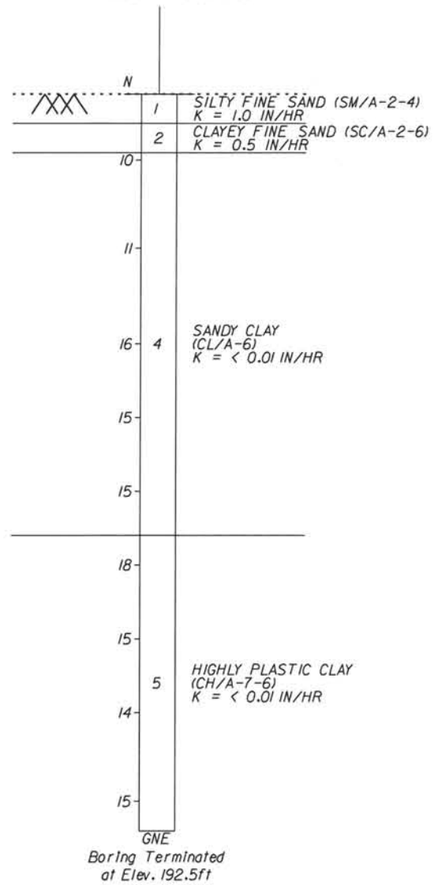
* BORING WAS INSTALLED OUTSIDE OF SURVEY BOUNDARY. EXISTING GROUND SURFACE ELEVATION WAS NOT KNOWN.

BOR # PB-2
NORTHING 573744.977
EASTING 2052257.319
ELEV. 214.5
DATE 5/12/2011
DRILLER J. NELSON
HAMMER AUTOMATIC



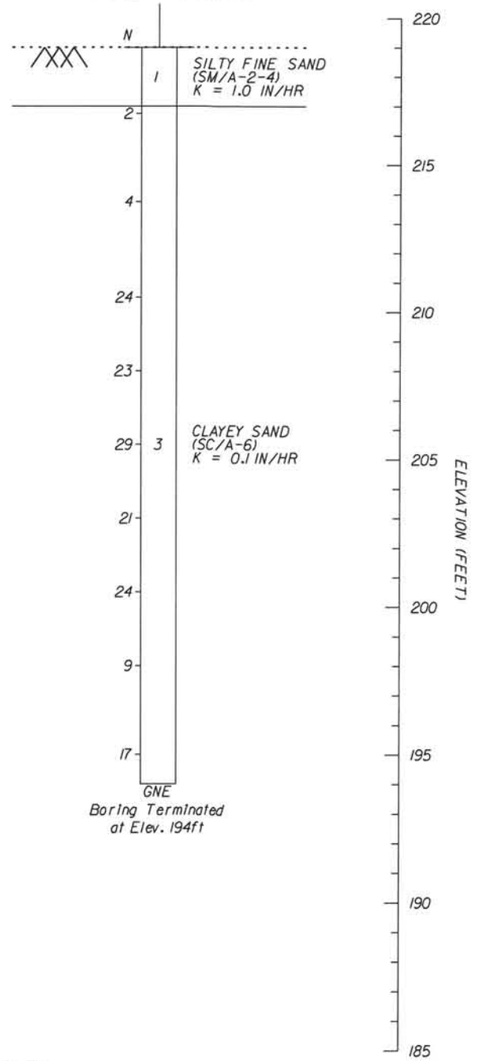
Boring Terminated
at Elev. 189.5ft

BOR # PB-3
NORTHING 573518.04
EASTING 2052404.29
ELEV. 217.5
DATE 5/17/2011
DRILLER W. DUNLAP
HAMMER AUTOMATIC



Boring Terminated
at Elev. 192.5ft

BOR # PB-4
NORTHING 573162.318
EASTING 2052881.479
ELEV. 219.0
DATE 5/12/2011
DRILLER J. NELSON
HAMMER AUTOMATIC



Boring Terminated
at Elev. 194ft

LEGEND

1. GNE - GROUNDWATER NOT ENCOUNTERED.
2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

NOTES

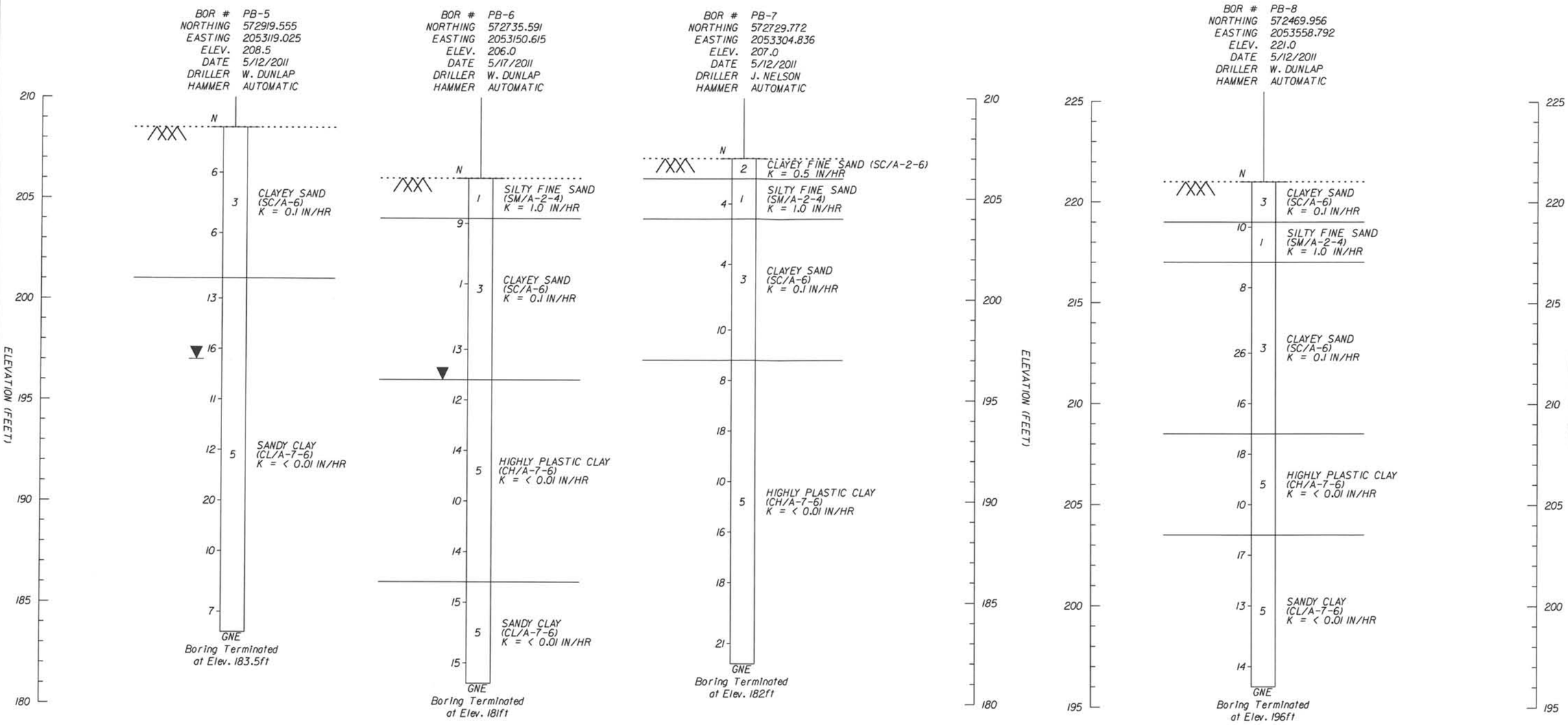
1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
3. PERMEABILITY VALUES SHOWN ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES, OR FACTOR OF SAFETY.

PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5A



NOTES

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2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
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REVISED:	M. MONTEITH, E.I.
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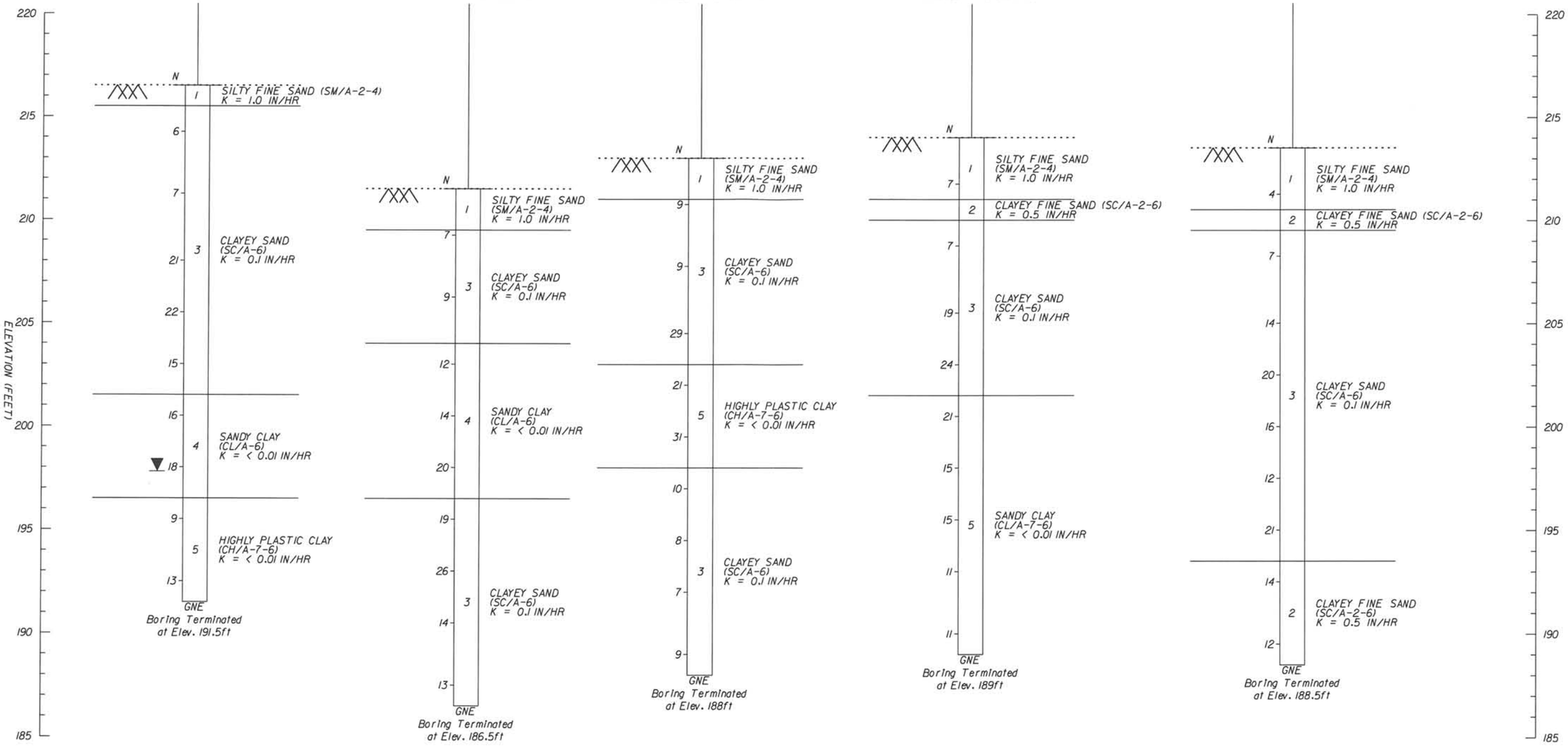
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5B



NOTES

1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
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LEGEND

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2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

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REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
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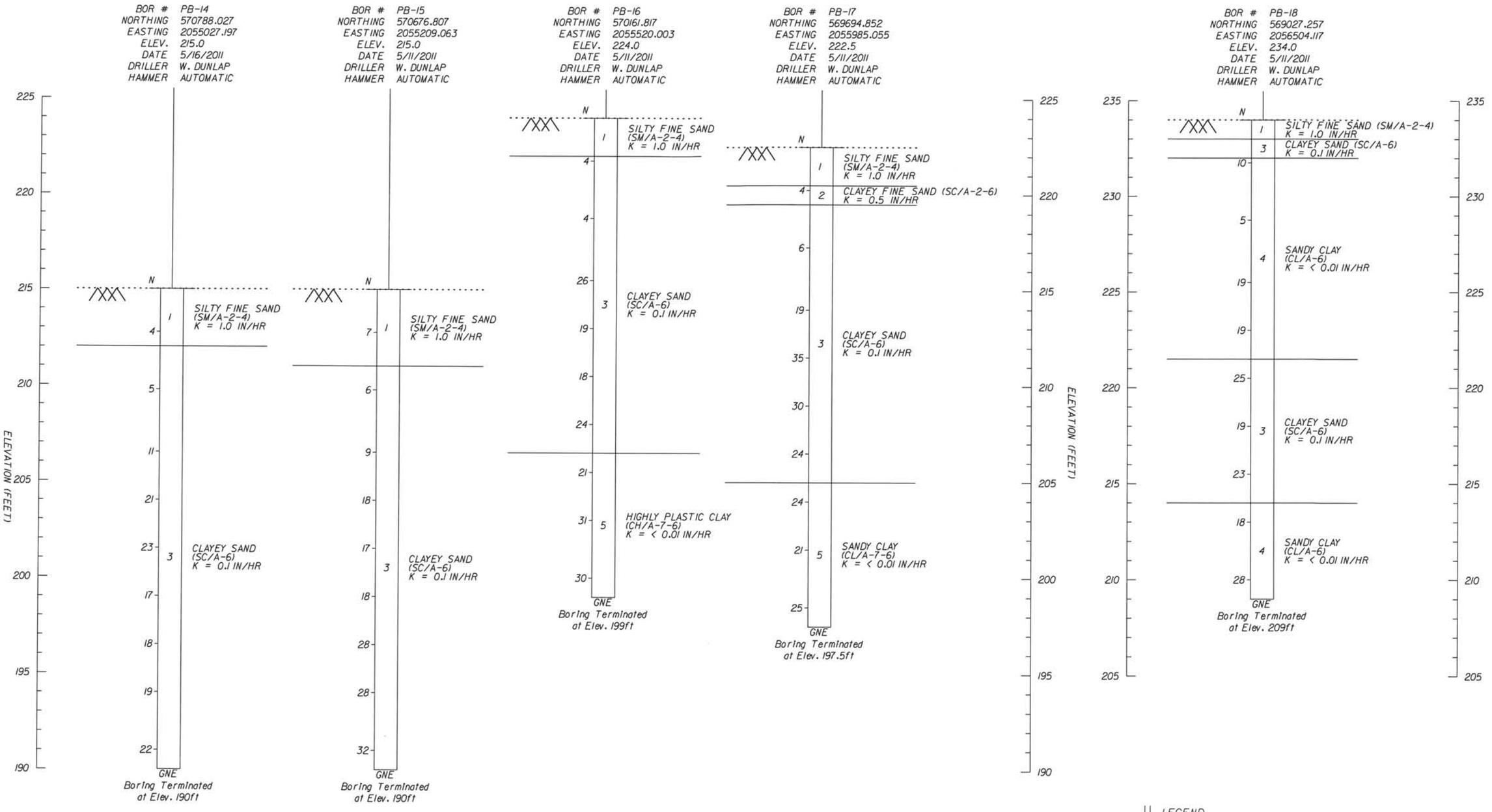
SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5C



NOTES

1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
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PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

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Environmental & Geotechnical Specialists, Inc.
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SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5D

APPENDIX A

SOIL SURVEY

REPORT OF TESTS

		SIEVE ANALYSIS RESULTS % PASSING						PLASTICITY			CLASSIFICATION		DESCRIPTION	
STRATUM NO.	NO. OF TESTS	4 MESH	10 MESH	20 MESH	40 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	UNIFIED GROUP	AASHTO GROUP	COLOR	MATERIAL
1	10	100	100	93-100	75-98	22-69	21-33	1	17	5	SM	A-2-4	BROWN	SILTY FINE SAND
2	5	100	99-100	79-100	56-100	33-92	26-33	4	27-38	11-17	SC	A-2-6	BROWN AND GRAY	CLAYEY FINE SAND
3	47	100	100	98-100	87-100	41-84	36-49	43	19-40	11-24	SC	A-6	BROWN AND GRAY	CLAYEY SAND
4	8	100	100	99-100	97-100	66-88	51-63	8	26-39	11-23	CL	A-6	BROWN AND GRAY	SANDY CLAY
5	23	100	100	97-100	95-100	56-99	51-96	21	41-89	11-60	CL/CH	A-7-6	BROWN, GRAY, AND ORANGE	SANDY CLAY AND HIGHLY PLASTIC CLAY

STANDARD PENETRATION NOTES

Granular Materials Relative Density	SPT (blows/12 in.)	Silts and Clays Consistency	SPT (blows/12 in.)
Very Loose	Less than 3	Very Soft	Less than 1
Loose	3 – 8	Soft	1 – 3
Medium or Compact	8 – 24	Firm	3 – 6
Dense	24 – 40	Stiff	6 – 12
Very Dense	Greater than 40	Very Stiff	12 – 24
		Hard	Greater than 24

SPLIT–SPOON:

INSIDE DIAMETER:	1⅜ in.
OUTSIDE DIAMETER:	2.0 in.
AVG. HAMMER DROP:	30.0 in.
HAMMER WEIGHT:	140 lbs.
HAMMER TYPE:	Automatic

NOTES

1. Numbers left of borings indicate standard penetration test (SPT) N–values for 12 inch penetration (Unless otherwise noted).
2. Numbers in center of borings indicate the stratum number.
3. Soil descriptions and standard penetration values shown are for the soil boring only and may not apply to any other location. Extrapolation of the soil boring data to other locations is the sole responsibility of the person performing the extrapolation.
4. Strata boundaries are approximate.
5. Water Levels shown represent the water depths encountered. Fluctuations in water depths should be expected.

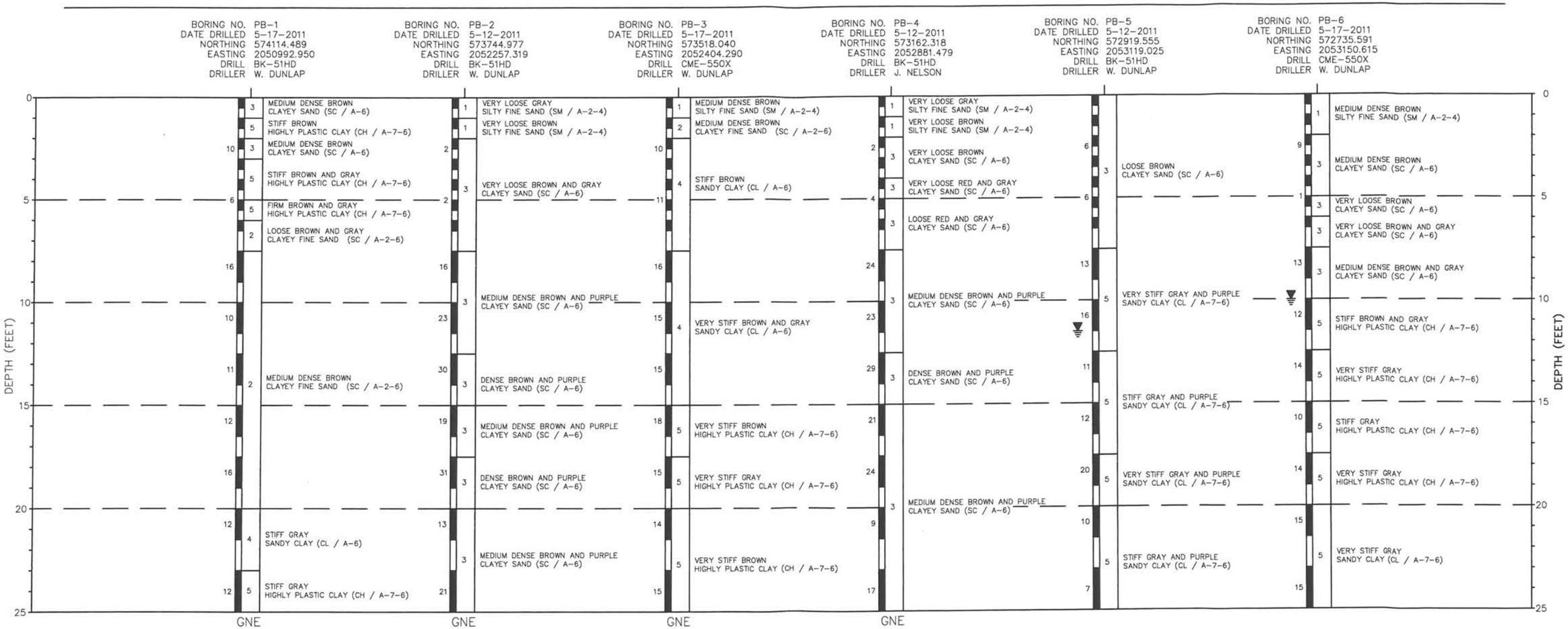
LEGEND

▼ WATER LEVEL AFTER 24–HOURS

GNE GROUNDWATER NOT ENCOUNTERED

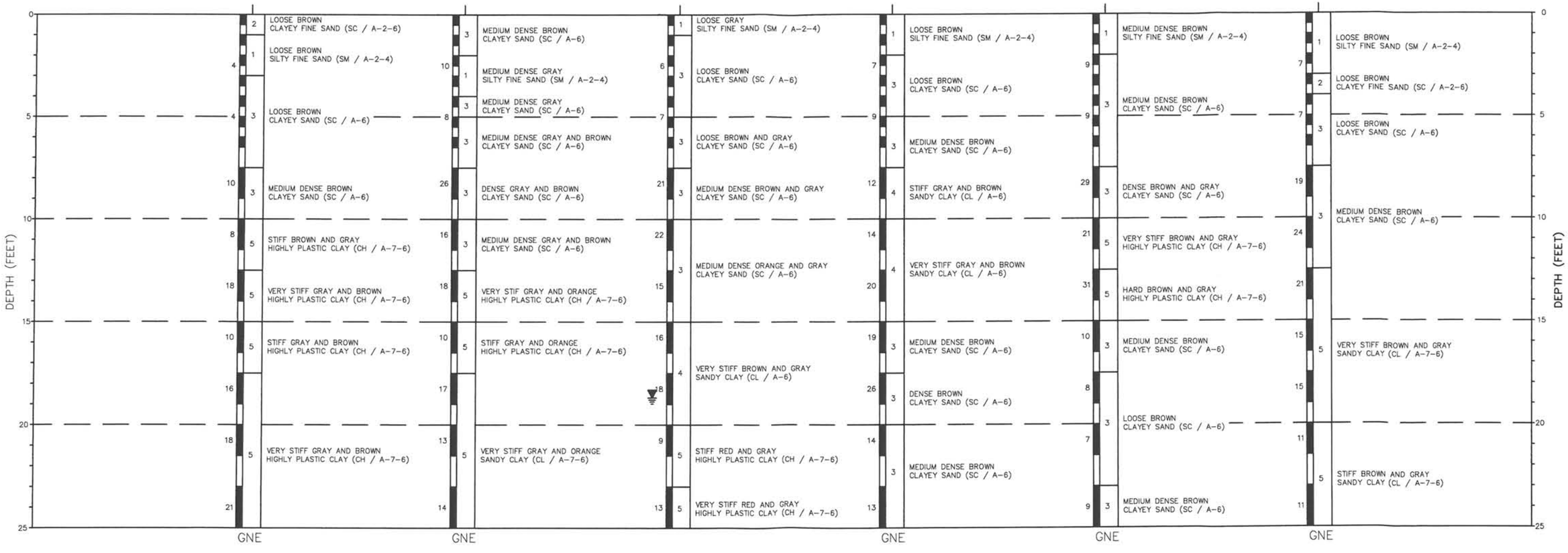
REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	SOIL SURVEY REPORT OF TESTS	SHEET NO.
	M. HAYDEN, P.E.	EGS 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION		
	P.E. NO.: 34067	Cert. of Auth.: 6222	LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



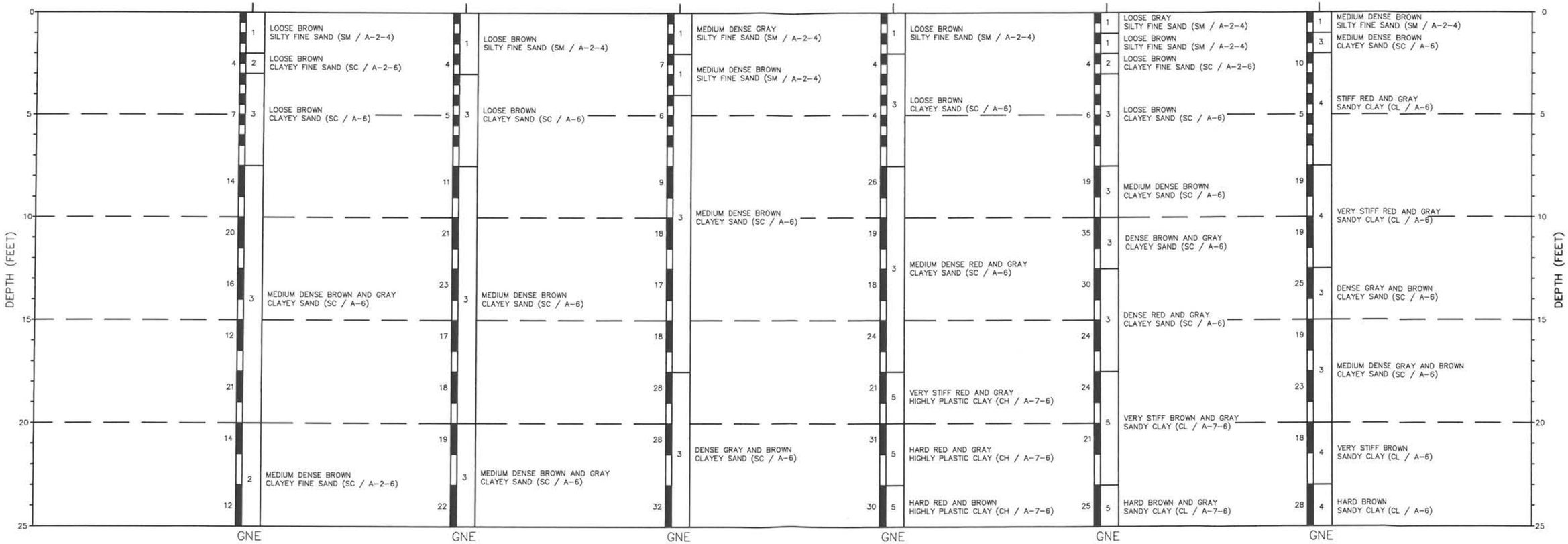
REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(1 OF 3)*	SHEET NO.
	M. HAYDEN, P.E.	EGS Cert. of Auth.: 6222	PROJECT LOCATION		
	P.E. NO.: 34067	3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(2 OF 3)*	SHEET NO.
						M. HAYDEN, P.E. P.E. NO.: 34067	EGS Cert. of Auth.: 6222 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(3 OF 3)*	SHEET NO.
	M. HAYDEN, P.E. P.E. NO.: 34067	EGS Cert. of Auth.: 6222 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION LEON COUNTY, FLORIDA		

APPENDIX B

SOIL BORING LOGS

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-1
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: >25.0' **AFTER 24 HOURS:** >25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 574114.489
EASTING: 2050992.950
ELEVATION (FEET):
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		
				STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6	-200%=67 LL=55 PI=28	26		
					SC A-6	-200%=39 LL=34 PI=21	14	10	
4				MEDIUM DENSE BROWN CLAYEY SAND	CH A-7-6		43		
							51		
				STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=82 LL=74 PI=44	55	6	
2				FIRM BROWN AND GRAY HIGHLY PLASTIC CLAY	SC A-2-6		23		
	8			LOOSE BROWN CLAYEY FINE SAND		-200%=30 LL=38 PI=17	18	16	
							17	10	
	12						18		
4				MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=33 LL=27 PI=11	16	11	
							14	12	
	16					-200%=27 LL=30 PI=16	24	16	
6	20			STIFF GRAY SANDY CLAY	CL A-6		24	12	
	24			STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=58 LL=60 PI=37	33	12	
8	28								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-2
DRILLER: J.NELSON
DEPTH TO WATER - INITIAL: ▽ >25.0' **AFTER 24 HOURS:** ▼ >25.0' **CAVING** ⊂ NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573744.977
EASTING: 2052257.319
ELEVATION (FEET): 214.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			VERY LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=25	9				
							8				
				VERY LOOSE BROWN SILTY FINE SAND			17		2		
							16				
	4			VERY LOOSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=36 LL=25 PI=11	17				
							17		2		
2							17				
	8			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=42 LL=36 PI=20	17		16		
							15		23		
4	12			DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		17		30		
	16			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=49 LL=35 PI=14	19		19		
				DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		17		31		
6	20			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=47 LL=32 PI=18	14		13		
	24						16		21		
8	28										

Wc (%) axis: 10 20 30 40 60
N-Value* axis: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-3
DRILLER: W.DUNLAP
DEPTH TO WATER - INITIAL: ▽ >25.0' **AFTER 24 HOURS:** ▼ >25.0' **CAVING** C NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573518.040
EASTING: 2052404.290
ELEVATION (FEET): 217.5
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		3			
					SC A-2-6		3			
				MEDIUM DENSE BROWN CLAYEY FINE SAND		-200%=51 LL=32 PI=11	10	10		
							14			
	4			STIFF BROWN SANDY CLAY	CL A-6		16			
						-200%=53 LL=34 PI=18	18	11		
2							14			
	8			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-6	-200%=51 LL=32 PI=15	25	16		
							19	15		
	12									
4							18	15		
	16			VERY STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6		25	18		
				VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=89	28	15		
6	20			VERY STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6		48	14		
	24					-200%=74 LL=51 PI=30	62	15		
8	28									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-4
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573162.318
EASTING: 2052881.479
ELEVATION (FEET): 219.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0	VERY LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=28	6	6			
					8	8			
		VERY LOOSE BROWN SILTY FINE SAND	SC A-6	-200%=47	20	20	2	2	
	4	VERY LOOSE BROWN CLAYEY SAND			22	22			
					20	20			
		VERY LOOSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=42 LL=33 PI=17	15	15	4	4	
2					14	14			
	8	LOOSE RED AND GRAY CLAYEY SAND							
		MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=36 LL=27 PI=15	12	12	24	24	
					13	13	23	23	
	12	DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		12	12	29	29	
4									
		MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=42 LL=35 PI=18	15	15	21	21	
	16				18	18	24	24	
6									
	20				20	20	9	9	
	24				20	20	17	17	
8	28								

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-5
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 11.5' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572919.555
EASTING: 2053119.025
ELEVATION (FEET): 208.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN CLAYEY SAND WITH WOOD	SC A-6	-200%=36	12, 30, 13	6		
	4						15, 14			
2						-200%=37 LL=32 PI=14	15, 19	6		
	8			VERY STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=58 LL=45 PI=24	23	13		
	12						27	16		
4				STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=51 LL=41 PI=18	25	11		
	16						27	12		
6	20			VERY STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=51 LL=48 PI=27	27	20		
				STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6		27	10		
	24						36	7		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-6
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 10.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572735.591
EASTING: 2053150.615
ELEVATION (FEET): 206.0
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		6 4			
				MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=38	13 16 18	9		
	4			VERY LOOSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=21 PI=11	19 20	1		
2				VERY LOOSE BROWN AND GRAY CLAYEY SAND						
	8			MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		15	13		
				STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=91 LL=75 PI=46	55	12		
4	12			VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6		55	14		
	16			STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=82 LL=70 PI=43	46	10		
				VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6		41	14		
6	20			VERY STIFF GRAY SANDY CLAY	CL A-7-6	-200%=76 LL=45 PI=21	32 29	15 15		
	24									
8	28									

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-7
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572729.772
EASTING: 2053304.836
ELEVATION (FEET): 207.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=21	8, 4	
		LOOSE BROWN SILTY FINE SAND	SM A-2-4		5	4
	4	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=30 PI=14	13, 14, 16, 18	4
2	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		22	10
	12	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=92 LL=80 PI=53	37	8
4		VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		33	18
	16	STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		36	10
6	20	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6	-200%=84 LL=51 PI=30	32, 30	16, 18
	24			-200%=82	32	21
8	28					

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-8
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572469.956
EASTING: 2053558.792
ELEVATION (FEET): 221.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=27 PI=11	2				
							10				
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		6		10		
	4						4				
				MEDIUM DENSE GRAY CLAYEY SAND	SC A-6		10				
						-200%=41 LL=24 PI=11	14		8		
2				MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		14				
	8			DENSE GRAY AND BROWN CLAYEY SAND	SC A-6	-200%=40 LL=29 PI=16	14		26		
				MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		14		16		
	12										
4				VERY STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY	CH A-7-6	-200%=96 LL=89 PI=60	50		18		
	16			STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY	CH A-7-6		52		10		
				VERY STIFF GRAY AND ORANGE SANDY CLAY	CL A-7-6	-200%=51 LL=41 PI=23	24		17		
6	20						22		13		
	24					-200%=62 LL=41 PI=11	23		14		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-9
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 18.7' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572087.123
EASTING: 2053930.747
ELEVATION (FEET): 216.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=37 LL=19 PI=11	2	
					10	
		LOOSE BROWN CLAYEY SAND	SC A-6		18	6
					18	
	4				19	
2		LOOSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=49	16	7
					15	
	8	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=44 LL=32 PI=17	15	21
4		MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND	SC A-6	-200%=49 LL=33 PI=18	14	22
	12				16	15
	16	VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-6	-200%=54 LL=37 PI=18	36	16
6					25	18
	20	STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		30	9
	24	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=78 LL=55 PI=35	31	13
8	28					

Wc (%) scale: 10, 20, 30, 40, 60
N-Value* scale: 10, 20, 30, 40, 60, 80

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-10
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: >25.0' **AFTER 24 HOURS:** >25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571759.881
EASTING: 2054124.448
ELEVATION (FEET): 211.5
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0	LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=21	10 3	10 20 30 40 60		10 20 30 40 60 80	
	4	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41	9 11 16		7		
2	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=40 LL=33 PI=17	21 16		9		
		STIFF GRAY AND BROWN SANDY CLAY	CL A-6		18		12		
4	12	VERY STIFF GRAY AND BROWN SANDY CLAY	CL A-6	-200%=55 LL=28 PI=11	20 23		14 20		
	16	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		19		
6	20	DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=35 PI=17	21		26		
		MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=24 PI=14	21		14 13		
8	24								
	28								

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-11
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571581.276
EASTING: 2054419.136
ELEVATION (FEET): 213.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4	-200%=33 LL=17 PI=5	4, 8	
		MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=31 PI=15	12, 15, 19, 16, 14	9, 9
2	8	DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		13	29
	12	VERY STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=89 LL=70 PI=41	30	21
4		HARD BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		31	31
	16	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=25 PI=11	16	10
6	20	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=38 LL=25 PI=11	19, 21	8, 7
	24	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		25	9
8	28					

Wc (%): 10, 20, 30, 40, 60
N-Value*: 10, 20, 30, 40, 60, 80
WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-12
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571306.196
EASTING: 2054523.464
ELEVATION (FEET): 214.0
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=26	4	
					5	
					11	7
	4	LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		15	
					17	
2		LOOSE BROWN CLAYEY SAND	SC A-6	-200%=47 LL=31 PI=11	16	7
					15	
	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=26 PI=11	13	19
4					10	24
	12	VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=64 LL=41 PI=18	19	21
					26	15
	16				23	15
6	20	STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=66 LL=41 PI=22	20	11
	24				22	11
8	28					

N-Value* (10, 20, 30, 40, 60, 80)

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-13
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571079.061
EASTING: 2054902.809
ELEVATION (FEET): 213.5
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		7				
							3				
				LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=33	8		4		
	4						16				
				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=45 LL=36 PI=19	16				
2							7		7		
	8						17				
				MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=42 LL=39 PI=20	16		14		
	12						19		20		
4							18		16		
	16					-200%=49 LL=33 PI=15	21		12		
							20		21		
6	20			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=26 LL=34 PI=11	21		14		
	24						10		12		
8	28										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-14
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570788.027
EASTING: 2055027.197
ELEVATION (FEET): 215.0
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=23	7 4 7		4		
	4			LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=28 PI=13	10 16 17 16		5		
2	8			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=40 PI=24	18		11		
	12						18		21		
4						-200%=47 LL=37 PI=20	20		23		
	16						16		17		
							17		18		
6	20			MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		14		19		
	24					-200%=39 LL=29 PI=14	14		22		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-15
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570676.807
EASTING: 2055209.063
ELEVATION (FEET): 215.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4	-200%=21	9	10 20 30 40 60		10 20 30 40 60 80	
							6				
				MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		7		7		
	4						11				
				MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=37 LL=25 PI=15	14				
2							15		6		
							14				
	8					-200%=41 LL=33 PI=16	16		9		
							15		18		
	12										
4						-200%=36 LL=20 PI=11	18		17		
	16						28		18		
				DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		23		28		
6	20						16		28		
	24					-200%=45 LL=30 PI=11	17		32		
8											
	28										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-16
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570161.817
EASTING: 2055520.003
ELEVATION (FEET): 224.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND WITH LIMEROCK	SM A-2-4	-200%=21	7				
							9				
				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=30 PI=12	13		4		
	4						16				
							19		4		
2							18				
	8						16				
				MEDIUM DENSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=36 LL=26 PI=13	11		26		
							12		19		
4	12						13		18		
	16						15		24		
				VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		18		21		
6	20			HARD RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=71 LL=54 PI=29	25		31		
	24			HARD RED AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		21		30		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-17
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 569694.852
EASTING: 2055985.055
ELEVATION (FEET): 222.5
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=23	7, 6			
				LOOSE BROWN SILTY FINE SAND	SC A-2-6		10	4		
	4			LOOSE BROWN CLAYEY FINE SAND			12, 16			
2				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=44 LL=30 PI=12	17, 17	6		
	8			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=35 PI=12	18	19		
				DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		15	35		
4	12			DENSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=47 LL=33 PI=18	17, 14	30, 24		
6	20			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=51 LL=43 PI=24	18, 27	24, 21		
	24			HARD BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=72 LL=45 PI=21	34	25		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-18
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 569027.257
EASTING: 2056504.117
ELEVATION (FEET): 234.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0		MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		6				
				SC A-6	-200%=36 LL=20 PI=11	11				
			MEDIUM DENSE BROWN CLAYEY SAND			18		10		
						17				
	4		STIFF RED AND GRAY SANDY CLAY	CL A-6	-200%=54 LL=34 PI=14	15		5		
2						17				
						14				
	8		VERY STIFF RED AND GRAY SANDY CLAY	CL A-6	-200%=51 LL=39 PI=23	20		19		
						14		19		
4	12		DENSE GRAY AND BROWN CLAYEY SAND	SC A-6	-200%=36 LL=31 PI=15	14		25		
	16		MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		18		19		
						13		23		
6	20		VERY STIFF BROWN SANDY CLAY	CL A-6		27		18		
	24		HARD BROWN SANDY CLAY	CL A-6	-200%=63 LL=26 PI=11	17		28		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

APPENDIX C

SOIL CLASSIFICATION DATA

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-1

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
1.0-1.5	26	100	100	99	97	93	83	67	55	28			CH	A-7-6	5	STIFF BROWN HIGHLY PLASTIC CLAY
2.0-2.5	14	100	100	98	87	45	41	39	34	21		10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	43												CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
4.0-4.5	51												CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
5.0-5.5	55	100	100	100	98	87	85	82	74	44		6	CH	A-7-6	5	FIRM BROWN AND GRAY HIGHLY PLASTIC CLAY
6.0-6.5	23												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
7.5-9.0	18	100	99	79	56	39	33	30	38	17		16	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
10.0-11.5	17											10	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
12.5-13.0	18												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
13.0-14.0	16	100	100	88	77	72	48	33	27	11		11	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-1

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
15.0-16.5	14											12	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
17.5-19.0	24	100	100	100	100	99	92	27	30	16		16	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
20.0-21.5	24											12	CL	A-6	4	STIFF GRAY SANDY CLAY
23.0-25.0	33	100	100	100	99	99	85	58	60	37		12	CH	A-7-6	5	STIFF GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-2

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	9												SM	A-2-4	1	VERY LOOSE GRAY SILTY FINE SAND
1.0-1.5	8	100	100	100	98	89	65	25					SM	A-2-4	1	VERY LOOSE BROWN SILTY FINE SAND
2.0-2.5	17											2	SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
3.0-3.5	16												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
4.0-4.5	17												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
5.0-5.5	17	100	100	100	98	90	69	36	25	11		2	SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
6.0-6.5	17												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	17											16	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
10.0-11.5	15	100	100	100	98	92	73	42	36	20		23	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
12.5-14.0	17											30	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
15.0-16.5	19	100	100	100	99	93	73	49	35	14		19	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-2

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	17											31	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
20.0-21.5	14	100	100	100	99	92	77	47	32	18		13	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
23.0-25.0	16											21	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-3

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	3												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	3												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0-2.5	10	100	100	100	99	95	84	51	32	11		10	CL	A-6	4	STIFF BROWN SANDY CLAY
3.0-3.5	14												CL	A-6	4	STIFF BROWN SANDY CLAY
4.0-4.5	16												CL	A-6	4	STIFF BROWN SANDY CLAY
5.0-5.5	18	100	100	100	100	99	87	53	34	18		11	CL	A-6	4	STIFF BROWN SANDY CLAY
6.0-6.5	14												CL	A-6	4	STIFF BROWN SANDY CLAY
7.5-9.0	25											16	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
10.0-11.5	19	100	100	100	100	95	77	51	32	15		15	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
12.5-14.0	18											15	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
15.0-16.5	25											18	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-3

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	28	100	100	100	100	100	98	89				15	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
20.0-21.5	48											14	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY
23.0-25.0	62	100	100	100	100	100	95	74	51	30		15	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-4

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	VERY LOOSE GRAY SILTY FINE SAND
1.0-1.5	8	100	100	100	98	90	65	28					SM	A-2-4	1	VERY LOOSE BROWN SILTY FINE SAND
2.0-2.5	20											2	SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
3.0-3.5	22	100	100	100	98	92	75	47					SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
4.0-4.5	20												SC	A-6	3	VERY LOOSE RED AND GRAY CLAYEY SAND
5.0-5.5	15											4	SC	A-6	3	LOOSE RED AND GRAY CLAYEY SAND
6.0-6.5	14	100	100	100	98	91	69	42	33	17			SC	A-6	3	LOOSE RED AND GRAY CLAYEY SAND
7.5-9.0	12											24	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
10.0-11.5	13	100	100	100	99	90	69	36	27	15		23	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
12.5-14.0	12											29	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
15.0-16.5	15	100	100	100	99	92	71	42	35	18		21	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-4

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18											24	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
20.0-21.5	20											9	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
23.0-25.0	20											17	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-5

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	12												SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
1.0-1.5	30												SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
2.0-2.5	13	100	100	100	98	93	71	36				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
3.0-3.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	15	100	100	99	93	84	60	37	32	14		6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	23	100	100	100	100	99	86	58	45	24		13	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
10.0-11.5	27											16	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
12.5-14.0	25	100	100	100	100	98	80	51	41	18		11	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY
15.0-16.5	27											12	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-5

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	27	100	100	100	100	99	75	51	48	27		20	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
20.0-21.5	27											10	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY
23.0-25.0	36											7	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-6

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	4												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
2.0-2.5	13	100	100	100	99	93	73	38				9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0-4.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	19											1	SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
6.0-6.5	20	100	100	100	99	93	71	36	21	11			SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	15											13	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	55	100	100	100	100	99	97	91	75	46		12	CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	55											14	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
15.0-16.5	46	100	100	100	100	99	95	82	70	43		10	CH	A-7-6	5	STIFF GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-6

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	41											14	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
20.0-21.5	32											15	CL	A-7-6	5	VERY STIFF GRAY SANDY CLAY
23.0-25.0	29	100	100	100	100	99	97	76	45	21		15	CL	A-7-6	5	VERY STIFF GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-7

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	8												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
1.0-1.5	4	100	100	100	98	90	62	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	5											4	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	13												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	98	91	71	41	30	14		4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	22											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	37	100	100	100	100	100	99	92	80	53		8	CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	33											18	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
15.0-16.5	36											10	CH	A-7-6	5	STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-7

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	32	100	100	100	100	99	98	84	51	30		16	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
20.0-21.5	30											18	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
23.0-25.0	32	100	100	100	100	100	97	82				21	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-8 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	2												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
1.0-1.5	10	100	100	100	98	92	72	41	27	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0-2.5	6											10	SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
3.0-3.5	4												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
4.0-4.5	10												SC	A-6	3	MEDIUM DENSE GRAY CLAYEY SAND
5.0-5.5	14	100	100	100	98	92	71	41	24	11		8	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
7.5-9.0	14	100	100	100	98	91	65	40	29	16		26	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
10.0-11.5	14											16	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
12.5-14.0	50	100	100	100	100	99	97	96	89	60		18	CH	A-7-6	5	VERY STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY
15.0-16.5	52											10	CH	A-7-6	5	STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-8 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	24	100	100	100	99	93	56	51	41	23		17	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY
20.0-21.5	22											13	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY
23.0-25.0	23	100	100	100	100	99	98	62	41	11		14	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-9

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	2												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0-1.5	10	100	100	100	98	92	70	37	19	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0-2.5	18											6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	99	93	77	49				7	SC	A-6	3	LOOSE BROWN AND GRAY CLAYEY SAND
6.0-6.5	15												SC	A-6	3	LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	15	100	100	100	99	92	69	44	32	17		21	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	14											22	SC	A-6	3	MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND
12.5-14.0	16	100	100	100	99	94	78	49	33	18		15	SC	A-6	3	MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND
15.0-16.5	36											16	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-9

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	25	100	100	100	98	93	80	54	37	18		18	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	30											9	CH	A-7-6	5	STIFF RED AND GRAY HIGHLY PLASTIC CLAY
23.0-25.0	31	100	100	100	100	99	98	78	55	35		13	CH	A-7-6	5	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-10 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	3	100	100	96	75	41	22	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	9											7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	11	100	100	100	98	91	70	41					SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	21											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	16	100	100	100	99	95	61	40	33	17			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	18											12	CL	A-6	4	STIFF GRAY AND BROWN SANDY CLAY
10.0-11.5	20											14	CL	A-6	4	VERY STIFF GRAY AND BROWN SANDY CLAY
12.5-14.0	23	100	100	100	100	98	88	55	28	11		20	CL	A-6	4	VERY STIFF GRAY AND BROWN SANDY CLAY
15.0-16.5	18											19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-10

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	21	100	100	100	99	97	78	48	35	17		26	SC	A-6	3	DENSE BROWN CLAYEY SAND
20.0-21.5												14	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
23.0-25.0	21	100	100	100	100	99	84	36	24	14		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SANDY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-11

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	4												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	8	100	100	100	98	91	69	33	17	5			SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
2.0-2.5	12											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	98	93	75	48	31	15		9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	13											29	SC	A-6	3	DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	30	100	100	97	95	93	91	89	70	41		21	CH	A-7-6	5	VERY STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	31											31	CH	A-7-6	5	HARD BROWN AND GRAY HIGHLY PLASTIC CLAY
15.0-16.5	16	100	100	100	96	84	59	36	25	11		10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-11

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	19											8	SC	A-6	3	LOOSE BROWN CLAYEY SAND
20.0-21.5	21	100	100	100	98	89	67	38	25	11		7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
23.0-25.0	25											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-12

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	5	100	100	100	98	90	66	26					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	11											7	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	15												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0-4.5	17												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	99	93	74	47	31	11		7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	13	100	100	100	99	93	64	36	26	11		19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	10											24	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	19											21	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
15.0-16.5	26	100	100	99	98	95	87	64	41	18		15	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-12

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	23											15	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	20											11	CL	A-7-6	5	STIFF BROWN AND GRAY SANDY CLAY
23.0-25.0	22	100	100	100	100	95	84	66	41	22		11	CL	A-7-6	5	STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-13

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	3												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	8	100	100	100	99	91	67	33				4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0-3.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	7											7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	17	100	100	100	99	94	66	45	36	19			SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	16											14	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	19	100	100	100	97	72	48	42	39	20		20	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
12.5-14.0	18											16	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
15.0-16.5	21	100	100	100	99	95	79	49	33	15		12	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-13

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	20											21	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
20.0-21.5	21											14	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
23.0-25.0	10	100	100	100	99	88	49	26	34	11		12	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-14 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	7	100	100	100	98	90	62	23				4	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	10												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	17	100	100	100	98	92	71	41	28	13		5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	18	100	100	100	99	94	72	49	40	24		11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	18											21	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	20	100	100	100	98	93	74	47	37	20		23	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
15.0-16.5	16											17	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-14 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	17											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
20.0-21.5	14											19	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
23.0-25.0	14	100	100	100	99	94	71	39	29	14		22	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-15 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	6	100	100	100	96	81	44	21					SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	7											7	SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
3.0-3.5	11												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
4.0-4.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	15	100	100	100	98	90	63	37	25	15		6	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	16	100	100	100	98	91	67	41	33	16		9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	15											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	18	100	100	100	97	89	64	36	20	11		17	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
15.0-16.5	28											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-15

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	23											28	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
20.0-21.5	16											28	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
23.0-25.0	17	100	100	100	99	94	69	45	30	11		32	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-16 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND WITH LIMEROCK
1.0-1.5	9	100	100	100	97	82	51	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND WITH LIMEROCK
2.0-2.5	13											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	18	100	100	100	98	92	70	49	30	12		4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	11											26	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
10.0-11.5	12	100	100	100	99	93	62	36	26	13		19	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
12.5-14.0	13											18	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
15.0-16.5	15											24	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-16

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18											21	CH	A-7-6	5	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY
20.0-21.5	25	100	100	99	97	94	84	71	54	29		31	CH	A-7-6	5	HARD RED AND GRAY HIGHLY PLASTIC CLAY
23.0-25.0	21											30	CH	A-7-6	5	HARD RED AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-17 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0-1.5	6	100	100	100	97	83	51	23					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	10											4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0-3.5	12												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	17	100	100	100	98	90	69	44	30	12		6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	17												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	18	100	100	100	98	91	72	49	35	12		19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	15											35	SC	A-6	3	DENSE BROWN AND GRAY CLAYEY SAND
12.5-14.0	17	100	100	100	99	93	70	47	33	18		30	SC	A-6	3	DENSE RED AND GRAY CLAYEY SAND
15.0-16.5	14											24	SC	A-6	3	DENSE RED AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-17

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18	100	100	100	99	93	71	51	43	24		24	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	27											21	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
23.0-25.0	34	100	100	99	97	95	87	72	45	21		25	CL	A-7-6	5	HARD BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-18 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	11	100	100	99	96	86	60	36	20	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0-2.5	18											10	CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
3.0-3.5	17												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
4.0-4.5	15												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
5.0-5.5	17	100	100	100	99	94	75	54	34	14		5	CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
6.0-6.5	14												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
7.5-9.0	20	100	100	100	99	93	66	51	39	23		19	CL	A-6	4	VERY STIFF RED AND GRAY SANDY CLAY
10.0-11.5	14											19	CL	A-6	4	VERY STIFF RED AND GRAY SANDY CLAY
12.5-14.0	14	100	100	100	98	80	54	36	31	15		25	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
15.0-16.5	18											19	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-18

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	13											23	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
20.0-21.5	27											18	CL	A-6	4	VERY STIFF BROWN SANDY CLAY
23.0-25.0	17	100	100	99	97	94	79	63	26	11		28	CL	A-6	4	HARD BROWN SANDY CLAY

APPENDIX D

USDA SOIL SURVEY

LEGEND

PROPOSED ROADWAY ALIGNMENT

USDA SOIL SURVEY DESCRIPTION

- 5, BLANTON FINE SAND; 0 TO 5 PERCENT SLOPES
- 10, DOTHAN LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 11, DOTHAN LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 24, LUCY FINE SAND; 0 TO 5 PERCENT SLOPES
- 29, NORFOLK LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 30, NORFOLK LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 33, ORANGEBURG FINE SANDY LOAM; 2 TO 5 PERCENT SLOPES
- 34, ORANGEBURG FINE SANDY LOAM; 5 TO 8 PERCENT SLOPES
- 35, ORANGEBURG FINE SANDY LOAM; 8 TO 12 PERCENT SLOPES
- 39, PELHAM FINE SAND
- 41, PLUMMER FINE SAND
- 52, YONGES FINE SANDY LOAM

0 200 400 Feet

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.		
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE: USDA SOIL SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011 FIGURE NO.: D-1

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: USDA SOIL SURVEY MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: D-2

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: USDA SOIL SURVEY MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			DATE: June 2011
PROJ. NO.: 23-59-10-01	SCALE:		FIGURE NO.: D-3

LEGEND

PROPOSED ROADWAY ALIGNMENT

USDA SOIL SURVEY DESCRIPTION

- 5, BLANTON FINE SAND; 0 TO 5 PERCENT SLOPES
- 10, DOTHAN LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 11, DOTHAN LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 24, LUCY FINE SAND; 0 TO 5 PERCENT SLOPES
- 29, NORFOLK LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 30, NORFOLK LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 33, ORANGEBURG FINE SANDY LOAM; 2 TO 5 PERCENT SLOPES
- 34, ORANGEBURG FINE SANDY LOAM; 5 TO 8 PERCENT SLOPES
- 35, ORANGEBURG FINE SANDY LOAM; 8 TO 12 PERCENT SLOPES
- 39, PELHAM FINE SAND
- 41, PLUMMER FINE SAND
- 52, YONGES FINE SANDY LOAM

0 200 400 Feet

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.		
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011 | FIGURE NO.: D-4

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash.

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	**Depth**	**USDA texture**	**Classification**		**Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
			Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
	In				*Pct*	*Pct*					*Pct*	
5—Blanton fine sand, 0 to 5 percent slopes												
Blanton	0-7	*Fine sand	SP-SM	A-3, A-2-4	0	0	100	90-100	65-100	5-12	0-14	NP
	7-52	*Fine sand	SP-SM	A-2-4, A-3	0	0	100	90-100	65-100	5-12	0-14	NP
	52-80	*Sandy clay loam, Fine sandy loam	SM, SC, SC-SM	A-2-6, A-4, A-6, A-2-4	0	0	100	95-100	69-95	25-50	18-43	4-12
10—Dothan loamy fine sand, 2 to 5 percent slopes												
Dothan	0-5	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	5-13	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	13-46	*Sandy clay loam, Sandy loam	SC-SM, SM, SC	A-6, A-2, A-4	0	0	95-100	92-100	68-90	23-45	0-40	NP-15
	46-80	*Sandy clay loam, Sandy clay	SC-SM, CL, SC	A-4, A-6, A-7, A-2	0	0	95-100	92-100	70-95	30-50	25-45	4-18

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
11—Dothan loamy fine sand, 5 to 8 percent slopes												
Dothan	0-6	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	6-10	*Fine sandy loam, Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	10-64	*Sandy clay loam, Sandy loam	SM, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	68-90	23-45	0-45	NP-15
	64-80	*Sandy clay loam, Sandy clay	CL, SC, SC-SM	A-4, A-6, A-7, A-2	0	0	95-100	92-100	70-95	30-50	25-45	4-18
16—Fuquay fine sand, 0 to 5 percent slopes												
Fuquay	0-7	*Fine sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-83	5-20	0-14	NP
	7-37	*Fine sand, Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-83	5-20	0-14	NP
	37-64	*Sandy clay loam, Sandy loam, fine sandy loam	SC-SM, SM, SC	A-4, A-6, A-2	0	0	85-100	85-100	60-80	23-45	0-35	NP-18
	64-80	*Sandy clay, Sandy clay loam	SC, CL	A-2, A-4, A-6	0	0	95-100	90-100	60-93	28-55	20-39	8-25
25—Lucy fine sand, 5 to 8 percent slopes												
Lucy	0-5	*Fine sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-87	10-30	0-14	NP
	5-30	*Fine sand, Loamy fine sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-87	10-30	0-14	NP
	30-75	*Sandy clay loam, Fine sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	60-95	20-50	20-40	5-20
	75-80	*Fine sandy loam, Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
27—Lynchburg fine sandy loam												
Lynchburg, non-hydric	0-8	*Fine sandy loam	ML, SM	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	8-18	*Fine sandy loam	ML, SM	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	18-65	*Sandy clay loam, Sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	*Sandy clay loam, Sandy clay, clay	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	70-100	25-73	15-40	4-20
Lynchburg, hydric	0-8	*Fine sandy loam	SM, ML	A-4, A-2	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	8-18	*Fine sandy loam	SM, ML	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	18-65	*Sandy clay loam, Sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	*Sandy clay loam, Sandy clay, clay	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	70-100	25-73	15-40	4-20

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
29—Norfolk loamy fine sand, 2 to 5 percent slopes												
Norfolk	0-4	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	50-91	13-30	0-20	NP
	4-8	*Loamy fine sand, Loamy sand	SM	A-2	0	0	95-100	92-100	50-95	13-30	0-20	NP
	8-58	*Sandy clay loam, Fine sandy loam, clay loam	CL-ML, SC, SC-SM, CL	A-4, A-6, A-2	0	0	95-100	91-100	70-91	30-55	20-38	4-15
	58-80	*Sandy clay, Sandy clay loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0	0	100	98-100	65-98	36-72	20-45	4-22
30—Norfolk loamy fine sand, 5 to 8 percent slopes												
Norfolk	0-5	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	50-91	13-30	0-20	NP
	5-80	*Sandy clay loam, Fine sandy loam, clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6, A-2	0	0	95-100	91-100	70-96	30-55	20-38	4-15
32—Ocilla fine sand												
Ocilla	0-3	*Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-100	8-35	0-14	NP
	3-29	*Loamy fine sand, Fine sand	SM, SP-SM	A-3, A-2	0	0	100	95-100	75-100	8-35	0-14	NP
	29-39	*Fine sandy loam, Sandy loam, sandy clay loam	CL, SC, SM	A-4, A-6, A-2	0	0	100	95-100	80-100	30-55	0-40	NP-18
	39-80	*Sandy clay loam, Sandy loam, fine sandy loam	CL, SC, SM	A-4, A-6, A-2	0	0	100	95-100	80-100	30-55	0-40	NP-18

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
33—Orangeburg fine sandy loam, 2 to 5 percent slopes												
Orangeburg	0-5	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	5-10	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	10-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-4, A-6	0	0	98-100	95-100	71-96	38-58	22-40	8-19
34—Orangeburg fine sandy loam, 5 to 8 percent slopes												
Orangeburg	0-6	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	6-18	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	18-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-4, A-6	0	0	98-100	95-100	71-96	38-58	22-40	8-19
35—Orangeburg fine sandy loam, 8 to 12 percent slopes												
Orangeburg	0-5	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	5-19	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	19-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-6, A-4	0	0	98-100	95-100	71-96	38-58	22-40	8-19

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
39—Pelham fine sand												
Pelham, hydric	0-5	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	5-26	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	26-80	*Sandy clay loam, Sandy loam, fine sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	100	95-100	65-90	30-50	15-30	2-12
Pelham, non-hydric	0-5	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	5-26	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	26-80	*Sandy clay loam, Sandy loam, fine sandy loam	SC, SC-SM, SM	A-6, A-2, A-4	0	0	100	95-100	65-90	30-50	15-30	2-12
41—Plummer fine sand												
Plummer, hydric	0-17	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	17-61	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	61-80	*Fine sandy loam, Sandy loam, sandy clay loam	SM, SC, SC-SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14
Plummer, non-hydric	0-17	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	17-61	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	61-80	*Fine sandy loam, Sandy loam, sandy clay loam	SC, SC-SM, SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
42—Plummer mucky fine sand, depressional												
Plummer, depressional	0-13	*Fine sand	SP-SM, SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	13-65	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	65-80	*Sandy clay loam, Sandy loam, fine sandy loam	SM, SC, SC-SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14
48—Troup fine sand, 0 to 5 percent slopes												
Troup	0-8	*Fine sand	SM	A-4, A-2	0	0	95-100	90-100	65-90	15-40	0-14	NP
	8-44	*Fine sand	SM	A-4, A-2	0	0	95-100	90-100	65-90	15-40	0-14	NP
	44-80	*Sandy clay loam, Fine sandy loam	CL-ML, SC, SC-SM, CL	A-2, A-4	0	0	95-100	95-100	70-90	24-55	10-30	4-10
52—Yonges fine sandy loam												
Yonges	0-5	*Fine sandy loam	SM, ML	A-4	0	0	100	100	90-100	25-55	0-30	NP-7
	5-9	*Fine sand	SM	A-2-4	0	0	100	100	90-100	25-55	0-14	NP
	9-71	*Sandy clay loam	CL-ML, SC, SC-SM, CL	A-7, A-4, A-6	0	0	100	100	95-100	40-70	25-45	6-25
	71-80	*Sandy clay loam, Fine sandy loam	SM, CL, ML, SC	A-6, A-4	0	0	100	100	80-100	40-65	20-40	3-22
99—Water												
Water	—	—	—	—	—	—	—	—	—	—	—	—

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
5—Blanton fine sand, 0 to 5 percent slopes														
Blanton	0-7	-90-	0- 7- 15	2- 4- 7	1.35-1.60	42.00-141.00	0.03-0.07	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	7-52	-92-	0- 5- 15	2- 4- 7	1.35-1.60	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.5	.10	.10			
	52-80	-70-	0- 3- 28	12-27- 30	1.60-1.70	4.20-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.20	.20			
10—Dothan loamy fine sand, 2 to 5 percent slopes														
Dothan	0-5	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	1.0-3.0	.15	.15	5	2	134
	5-13	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-1.0	.15	.15			
	13-46	-70-	0- 8- 28	18-22- 35	1.60-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
	46-80	-50-	0-18- 28	18-32- 40	1.60-1.70	1.40-4.00	0.08-0.12	0.0-2.9	0.0-0.5	.28	.28			
11—Dothan loamy fine sand, 5 to 8 percent slopes														
Dothan	0-6	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	1.0-3.0	.15	.15	5	2	134
	6-10	-79-	0- 8- 30	10-13- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-1.0	.15	.15			
	10-64	-70-	0- 8- 28	18-22- 35	1.60-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
	64-80	-50-	0-18- 28	18-32- 40	1.60-1.70	1.40-4.00	0.08-0.12	0.0-2.9	0.0-0.5	.28	.28			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
16—Fuquay fine sand, 0 to 5 percent slopes														
Fuquay	0-7	-89-	0- 6- 15	2- 5- 7	1.40-1.50	42.00-141.00	0.04-0.09	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	7-37	-89-	0- 7- 15	2- 5- 7	1.40-1.50	42.00-141.00	0.04-0.09	0.0-2.9	0.0-1.0	.10	.10			
	37-64	-70-	0- 5- 28	15-25- 35	1.60-1.70	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	64-80	-57-	0- 4- 28	20-39- 40	1.60-1.70	0.42-1.40	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20			
25—Lucy fine sand, 5 to 8 percent slopes														
Lucy	0-5	-90-	0- 6- 15	2- 4- 12	1.35-1.65	42.00-141.00	0.06-0.10	0.0-2.9	1.0-2.5	.10	.10	5	1	220
	5-30	-90-	0- 4- 15	2- 6- 12	1.35-1.65	42.00-141.00	0.06-0.10	0.0-2.9	0.0-1.0	.10	.10			
	30-75	-69-	0- 4- 28	18-28- 35	1.55-1.70	4.00-14.00	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
	75-80	-79-	0- 1- 30	10-20- 20	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			
27—Lynchburg fine sandy loam														
Lynchburg, non-hydric	0-8	-74-	0-14- 50	5-13- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.5-5.0	.20	.20	5	3	86
	8-18	-79-	0-11- 50	5-10- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.0-1.0	.20	.20			
	18-65	-65-	0- 8- 28	18-27- 35	1.55-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	65-80	-59-	0- 7- 28	20-34- 50	1.55-1.70	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.20	.20			
Lynchburg, hydric	0-8	-74-	0-14- 50	5-13- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.5-5.0	.20	.20	5	3	86
	8-18	-79-	0-11- 50	5-10- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.0-1.0	.20	.20			
	18-65	-65-	0- 8- 28	18-27- 35	1.55-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	65-80	-59-	0- 7- 28	20-34- 50	1.55-1.70	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.20	.20			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
29—Norfolk loamy fine sand, 2 to 5 percent slopes														
Norfolk	0-4	-83-	0-11- 30	2- 6- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	1.0-3.0	.17	.17	5	2	134
	4-8	-85-	0- 7- 30	2- 8- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
	8-58	-61-	0- 6- 28	18-34- 35	1.30-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	58-80	-60-	0- 3- 20	20-38- 40	1.20-1.70	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
30—Norfolk loamy fine sand, 5 to 8 percent slopes														
Norfolk	0-5	-83-	0-11- 30	2- 6- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	1.0-3.0	.17	.17	5	2	134
	5-80	-61-	0- 6- 28	18-34- 35	1.30-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
32—Ocilla fine sand														
Ocilla	0-3	-89-	0- 8- 15	2- 4- 7	1.40-1.50	14.00-141.00	0.05-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	3-29	-87-	0- 9- 30	2- 5- 7	1.40-1.50	14.00-141.00	0.05-0.08	0.0-2.9	0.0-1.0	.10	.10			
	29-39	-68-	0-17- 28	15-15- 35	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			
	39-80	-55-	0-14- 28	15-31- 35	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
33— Orangeburg fine sandy loam, 2 to 5 percent slopes														
Orangeburg	0-5	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-10	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	10-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
34— Orangeburg fine sandy loam, 5 to 8 percent slopes														
Orangeburg	0-6	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	6-18	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	18-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
35— Orangeburg fine sandy loam, 8 to 12 percent slopes														
Orangeburg	0-5	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-19	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	19-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
39—Pelham fine sand														
Pelham, hydric	0-5	-89-	0- 5- 15	2- 6- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	1.0-6.0	.10	.10	5	1	220
	5-26	-91-	0- 6- 15	2- 3- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.5	.10	.10			
	26-80	-67-	0- 4- 28	15-28- 35	1.60-1.80	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
Pelham, non-hydric	0-5	-89-	0- 5- 15	2- 6- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	1.0-6.0	.10	.10	5	1	220
	5-26	-91-	0- 6- 15	2- 3- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.5	.10	.10			
	26-80	-67-	0- 4- 28	15-28- 35	1.60-1.80	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
41—Plummer fine sand														
Plummer, hydric	0-17	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	17-61	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	61-80	-80-	0- 5- 50	15-16- 30	1.50-1.90	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			
Plummer, non-hydric	0-17	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	17-61	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	61-80	-80-	0- 5- 50	15-16- 30	1.50-1.90	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			
42—Plummer mucky fine sand, depressional														
Plummer, depressional	0-13	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	8	0
	13-65	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	65-80	-73-	0- 5- 50	15-23- 30	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
48—Troup fine sand, 0 to 5 percent slopes														
Troup	0-8	-89-	0- 8- 15	2- 3- 7	1.45-1.65	42.00-141.00	0.05-0.10	0.0-2.9	1.0-2.0	.10	.10	5	1	220
	8-44	-90-	0- 6- 15	2- 5- 7	1.45-1.65	42.00-141.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.10			
	44-80	-71-	0- 3- 28	15-27- 30	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20			
52—Yonges fine sandy loam														
Yonges	0-5	-58-	0-32- 50	2-10- 20	1.35-1.70	4.00-42.00	0.09-0.14	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-9	-88-	0-10- 50	2- 2- 20	1.35-1.70	4.00-42.00	0.09-0.14	0.0-2.9	0.5-1.0	.20	.20			
	9-71	-67-	0-10- 28	20-23- 35	1.60-1.70	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.5	.17	.17			
	71-80	-67-	0- 4- 28	15-29- 35	1.20-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
99—Water														
Water	—	—	—	—	—	—	—	—	—					

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
5—Blanton fine sand, 0 to 5 percent slopes										
Blanton	A	Negligible	January	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	February	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	March	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	December	5.0-6.0	5.5-6.0	—	—	None	—	None
10—Dothan loamy fine sand, 2 to 5 percent slopes										
Dothan	B	Low	January	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	February	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	March	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	April	3.5-4.0	4.0-4.5	—	—	None	—	None
11—Dothan loamy fine sand, 5 to 8 percent slopes										
Dothan	B	Medium	January	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	February	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	March	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	April	3.5-4.0	4.0-4.5	—	—	None	—	None
16—Fuquay fine sand, 0 to 5 percent slopes										
Fuquay	B	Very low	January	4.0-6.0	4.5-6.0	—	—	None	—	None
	B	Very low	February	4.0-6.0	4.5-6.0	—	—	None	—	None
	B	Very low	March	4.0-6.0	4.5-6.0	—	—	None	—	None
25—Lucy fine sand, 5 to 8 percent slopes										
Lucy	B	Low	Jan-Dec	—	—	—	—	None	—	—

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
27—Lynchburg fine sandy loam										
Lynchburg, non-hydric	B/D	Very high	January	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	February	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	March	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	April	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	November	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	December	1.0-1.5	>6.0	—	—	None	—	None
Lynchburg, hydric	B/D	Very high	January	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	February	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	March	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	April	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	November	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	December	0.0-0.5	>6.0	—	—	None	—	None
29—Norfolk loamy fine sand, 2 to 5 percent slopes										
Norfolk	B	Low	January	4.0-6.0	>6.0	—	—	None	—	None
	B	Low	February	4.0-6.0	>6.0	—	—	None	—	None
	B	Low	March	4.0-6.0	>6.0	—	—	None	—	None
30—Norfolk loamy fine sand, 5 to 8 percent slopes										
Norfolk	B	Medium	January	4.0-6.0	>6.0	—	—	None	—	None
	B	Medium	February	4.0-6.0	>6.0	—	—	None	—	None
	B	Medium	March	4.0-6.0	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
32—Ocilla fine sand										
Ocilla	B/D	Very low	January	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	February	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	March	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	April	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	December	1.0-2.5	>6.0	—	—	None	—	None
33—Orangeburg fine sandy loam, 2 to 5 percent slopes										
Orangeburg	B	Low	Jan-Dec	—	—	—	—	None	—	—
34—Orangeburg fine sandy loam, 5 to 8 percent slopes										
Orangeburg	B	Medium	Jan-Dec	—	—	—	—	None	—	—
35—Orangeburg fine sandy loam, 8 to 12 percent slopes										
Orangeburg	B	Medium	Jan-Dec	—	—	—	—	None	—	—
39—Pelham fine sand										
Pelham, hydric	B/D	Low	January	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	February	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	March	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	April	0.0-0.5	>6.0	—	—	None	—	None
Pelham, non-hydric	B/D	Low	January	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	February	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	March	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	April	0.5-1.5	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
41—Plummer fine sand										
Plummer, hydric	A/D	Negligible	January	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	February	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	March	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	April	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	May	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	June	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	July	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	December	0.0-0.5	>6.0	—	—	None	—	None
Plummer, non-hydric	A/D	Negligible	January	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	February	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	March	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	April	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	May	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	June	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	July	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	December	0.5-1.5	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
42—Plummer mucky fine sand, depressional										
Plummer, depressional	A/D	Negligible	January	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	February	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	March	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	April	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	May	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	June	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	July	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	December	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
48—Troup fine sand, 0 to 5 percent slopes										
Troup	A	Negligible	Jan-Dec	—	—	—	—	None	—	—
52—Yonges fine sandy loam										
Yonges	C/D	Very high	January	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	February	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	March	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	April	0.0-1.0	>6.0	—	—	None	—	—
	C/D	Very high	November	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	December	0.0-1.0	>6.0	—	—	None	Long	Frequent
99—Water										
Water	—	—	Jan-Dec	—	—	—	—	None	—	—

APPENDIX E

GRAIN SIZE CORRELATION CURVES

STRATUM 1

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-7 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	62
200	0.075	21

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.035 mm

D_{50} = 0.16 mm

D_{60} = 0.18 mm

K = 0.0015 (cm/sec)

2.1 (in/hr)

C_u = 5.1

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

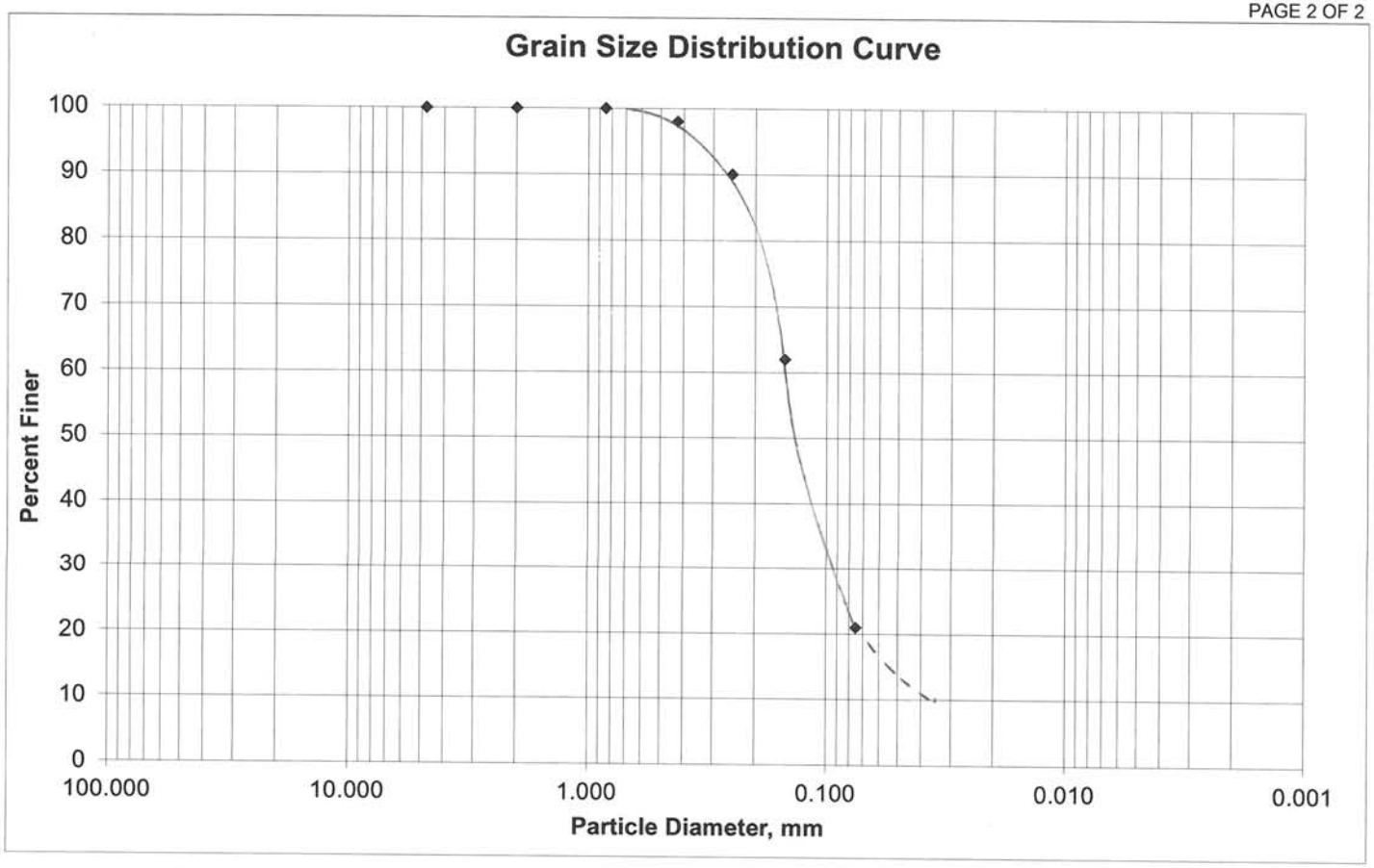
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-7 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	91
100	0.150	69
200	0.075	33

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.026 mm

D_{50} = 0.12 mm

D_{60} = 0.15 mm

K = 0.0005 (cm/sec)

0.7 (in/hr)

C_u = 5.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

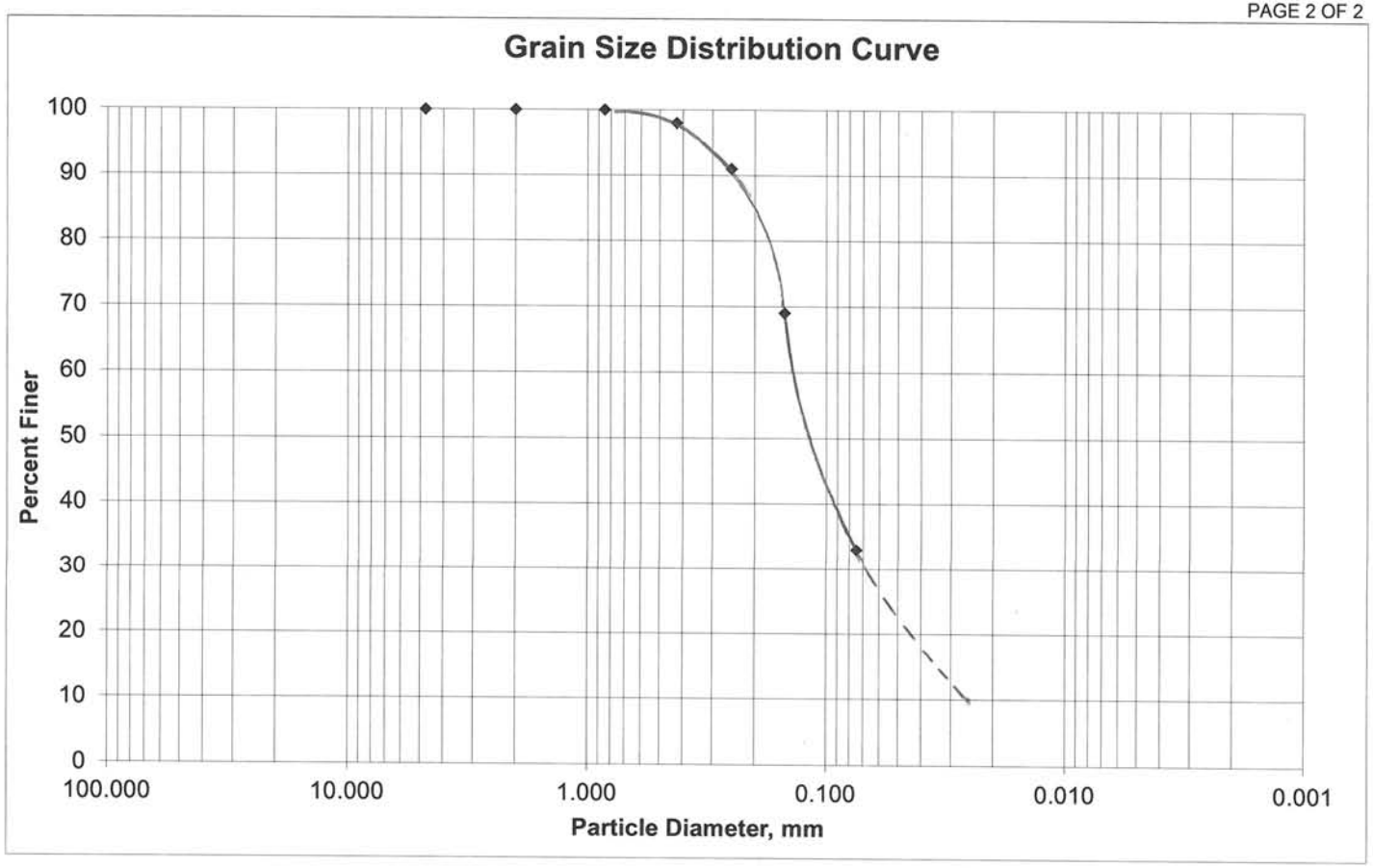
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-12 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	66
200	0.075	26

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.029 mm

D_{50} = 0.14 mm

D_{60} = 0.16 mm

K = 0.0008 (cm/sec)

1.1 (in/hr)

C_u = 5.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

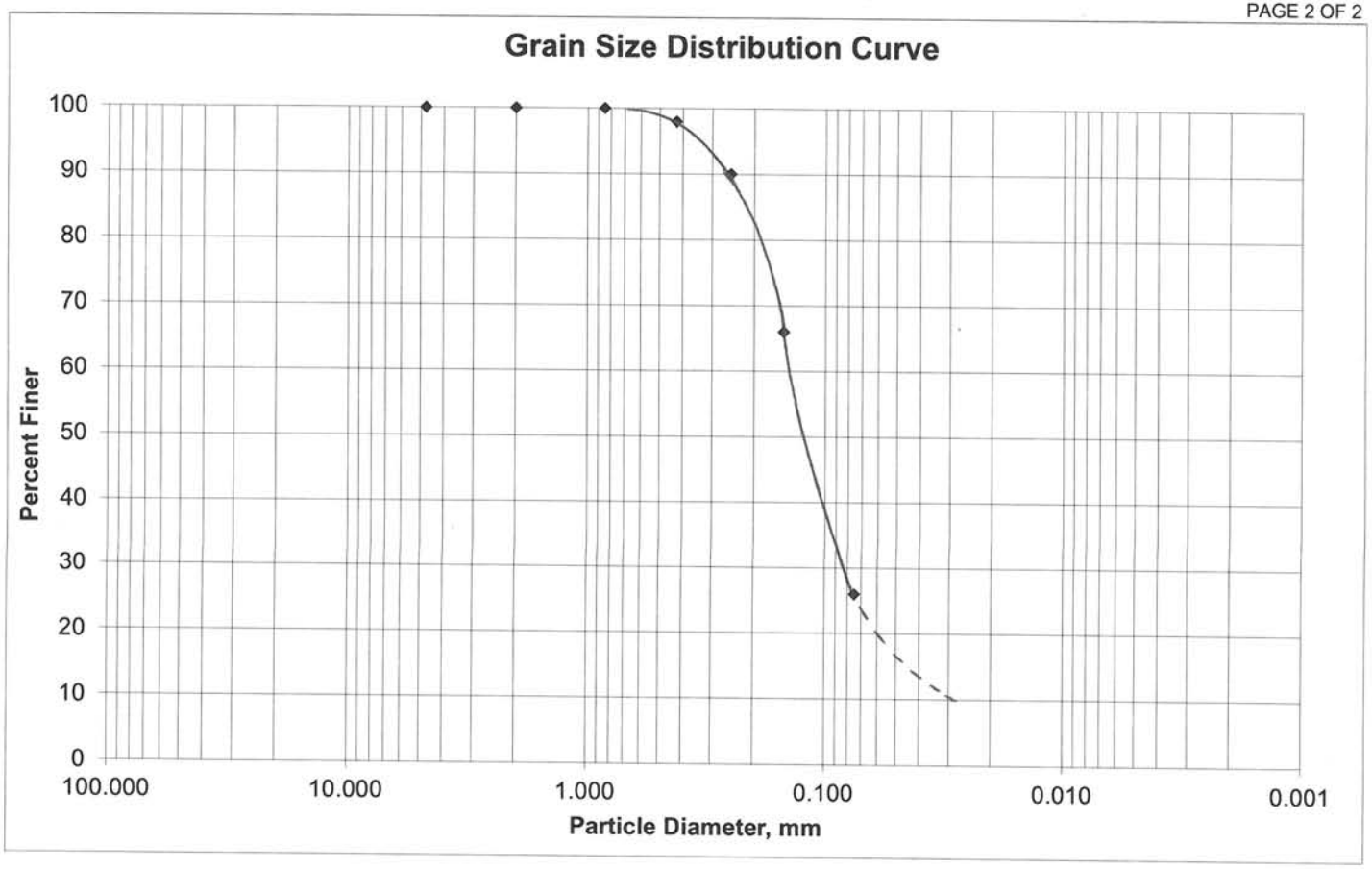
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-12 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

STRATUM 2

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-1 **DEPTH:** 17.5-19.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	100
60	0.250	99
100	0.150	92
200	0.075	27

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.020 mm

D_{50} = 0.09 mm

D_{60} = 0.09 mm

K = 0.0005 (cm/sec)

0.7 (in/hr)

C_u = 4.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

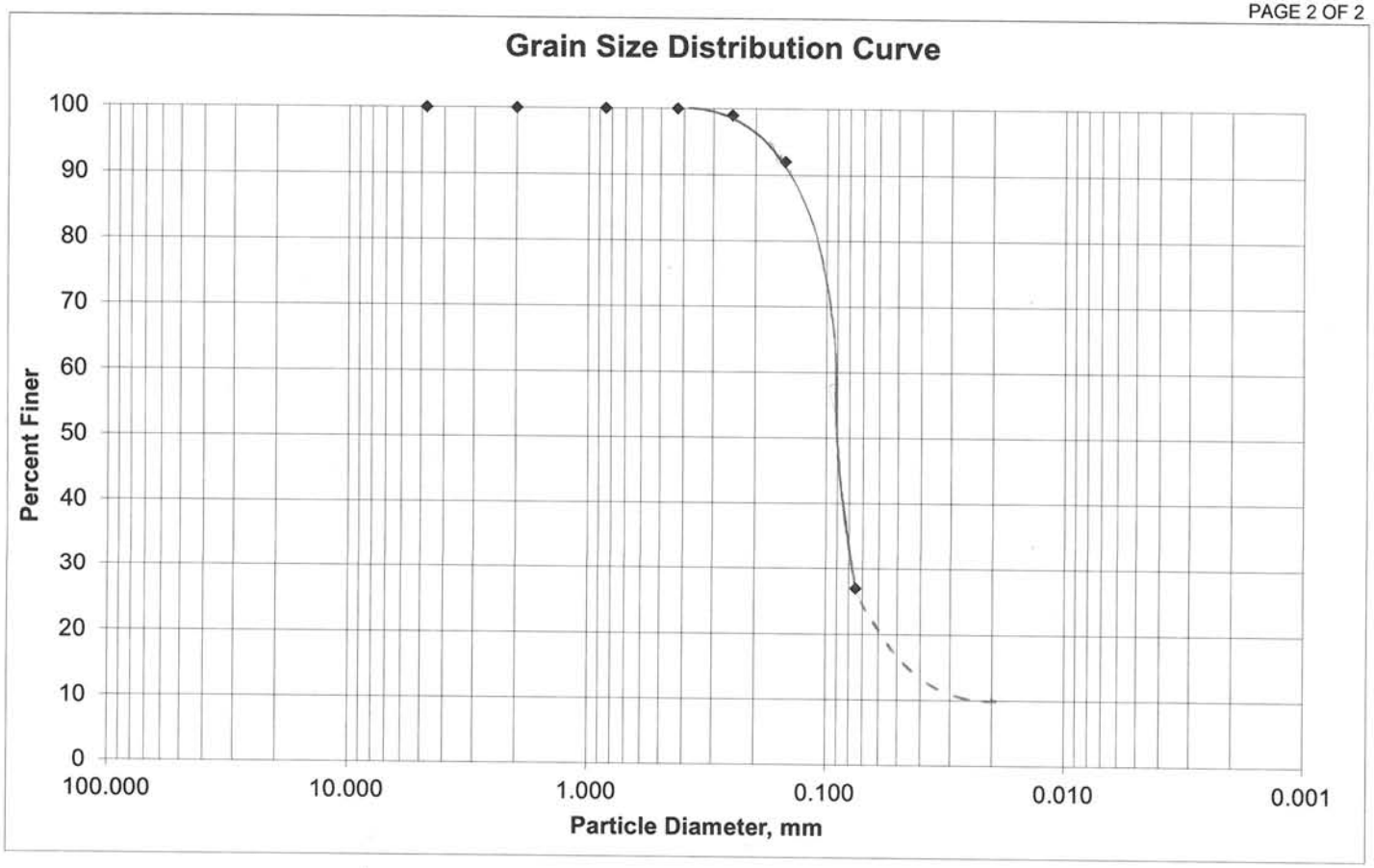
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-1 **DEPTH:** 17.5-19.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 23.0-25.0 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	88
100	0.150	49
200	0.075	26

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.030 mm

D_{50} = 0.14 mm

D_{60} = 0.20 mm

K = 0.0004 (cm/sec)

0.6 (in/hr)

C_u = 6.7

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

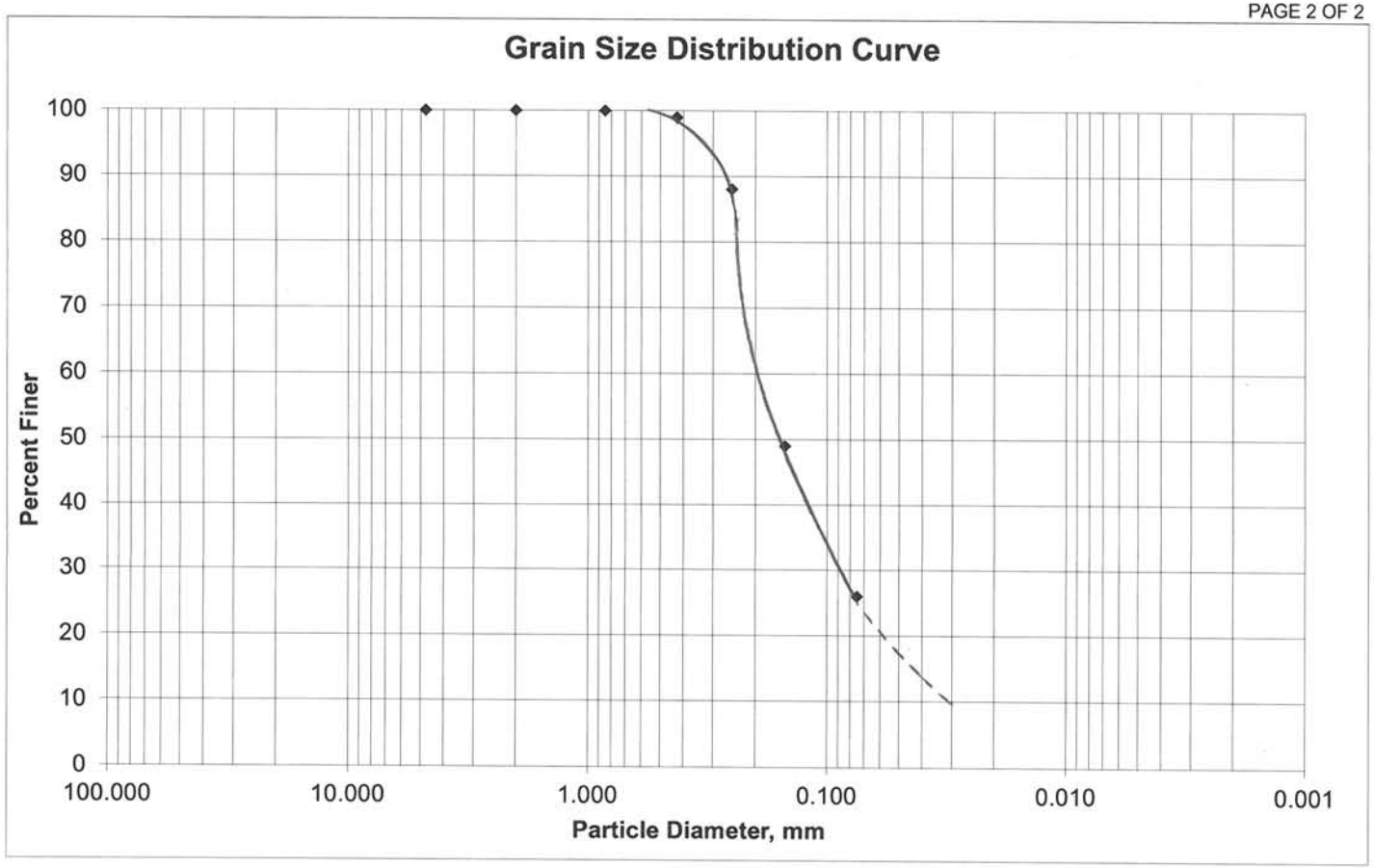
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 23.0-25.0 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 2.0-2.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	91
100	0.150	67
200	0.075	33

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.026 mm

D_{50} = 0.12 mm

D_{60} = 0.15 mm

K = 0.0003 (cm/sec)

0.4 (in/hr)

C_u = 5.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

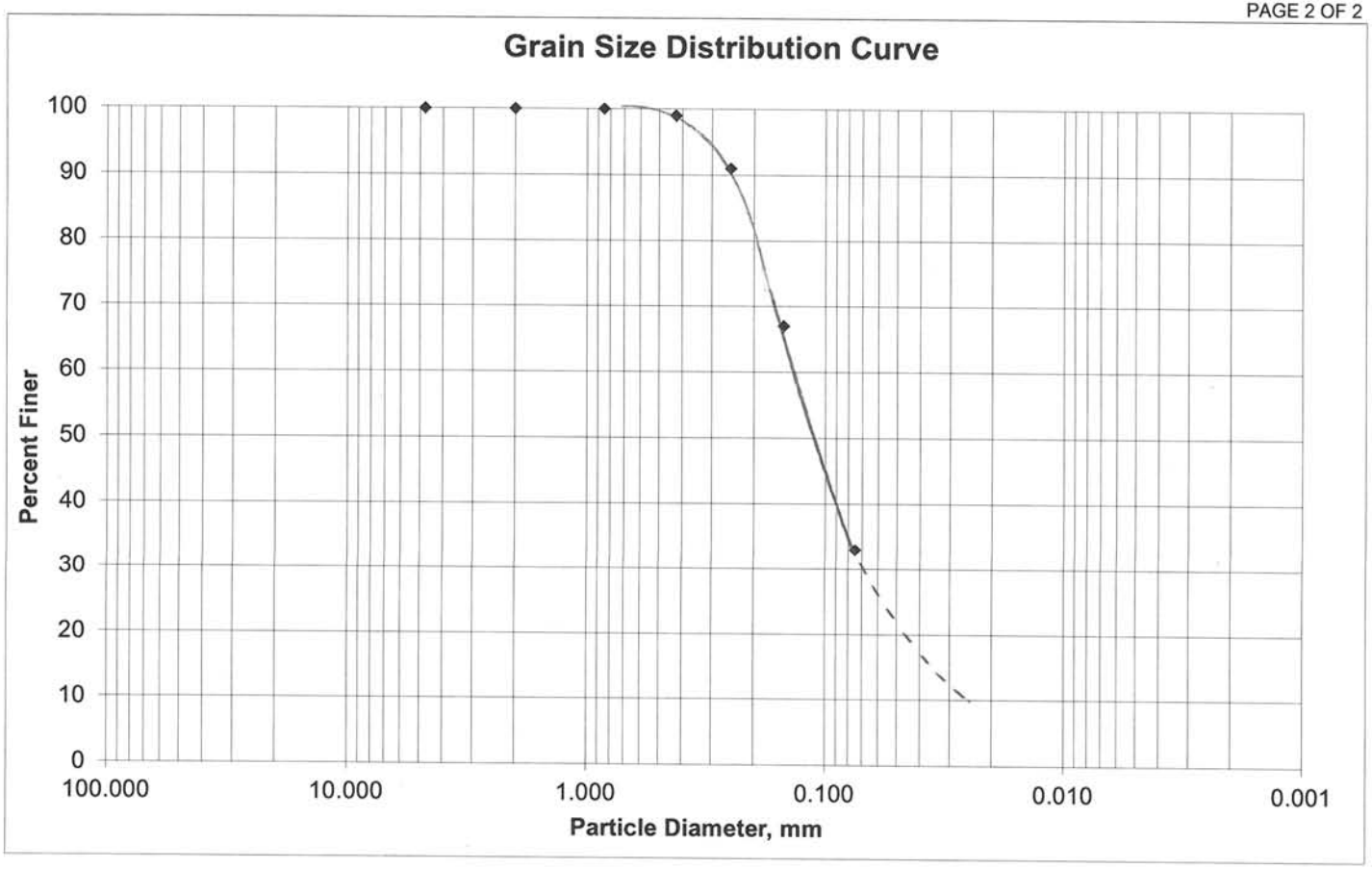
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 2.0-2.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

STRATUM 3

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 15.0-16.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	96
60	0.250	84
100	0.150	59
200	0.075	36

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.024 mm

D_{50} = 0.13 mm

D_{60} = 0.16 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 6.7

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

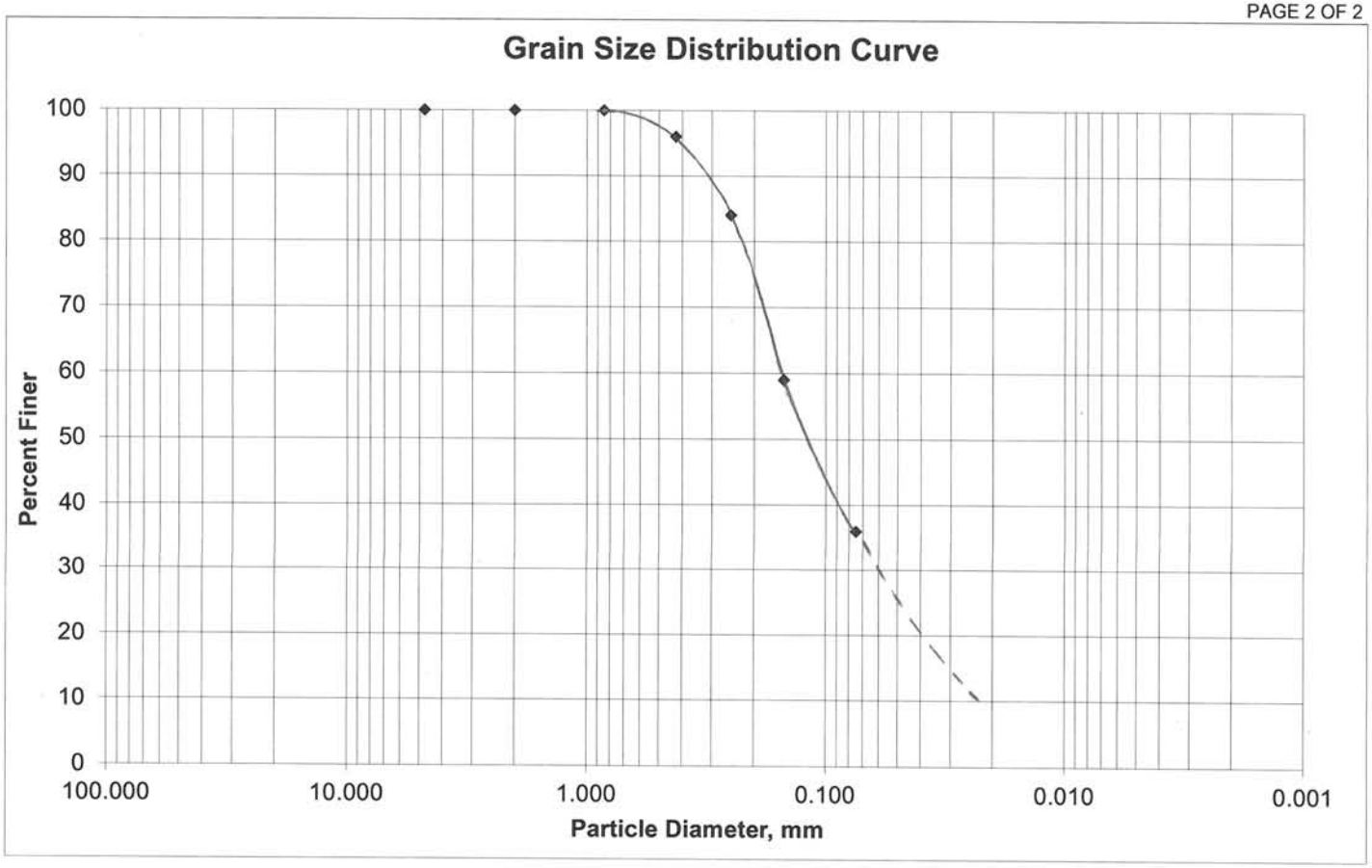
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 15.0-16.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-8 **DEPTH:** 7.5-9.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	91
100	0.150	65
200	0.075	40

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.022 mm

D_{50} = 0.11 mm

D_{60} = 0.15 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 6.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

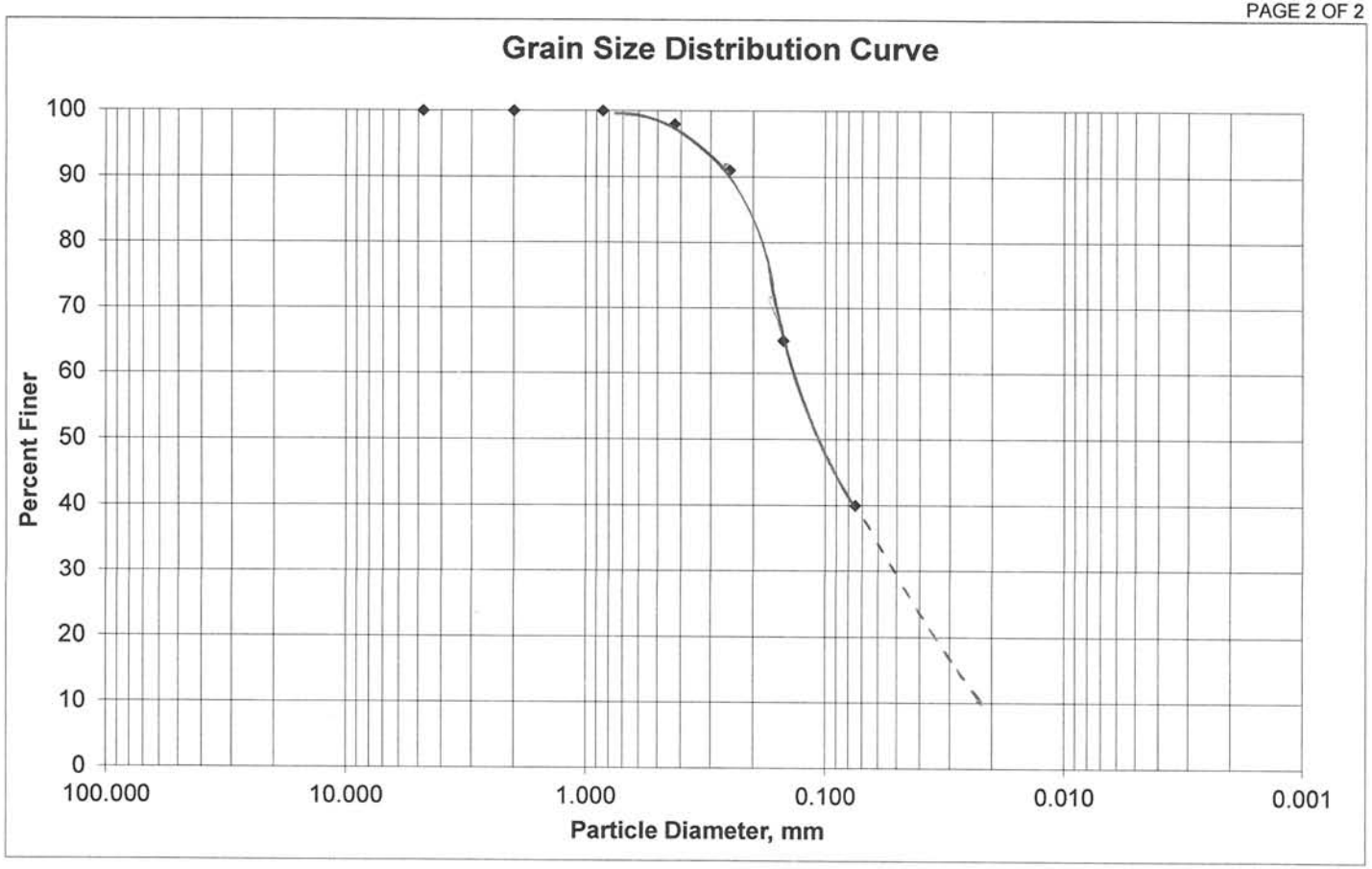
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-8 **DEPTH:** 7.5-9.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	69
200	0.075	44

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.023 mm

D_{50} = 0.09 mm

D_{60} = 0.12 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 5.2

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

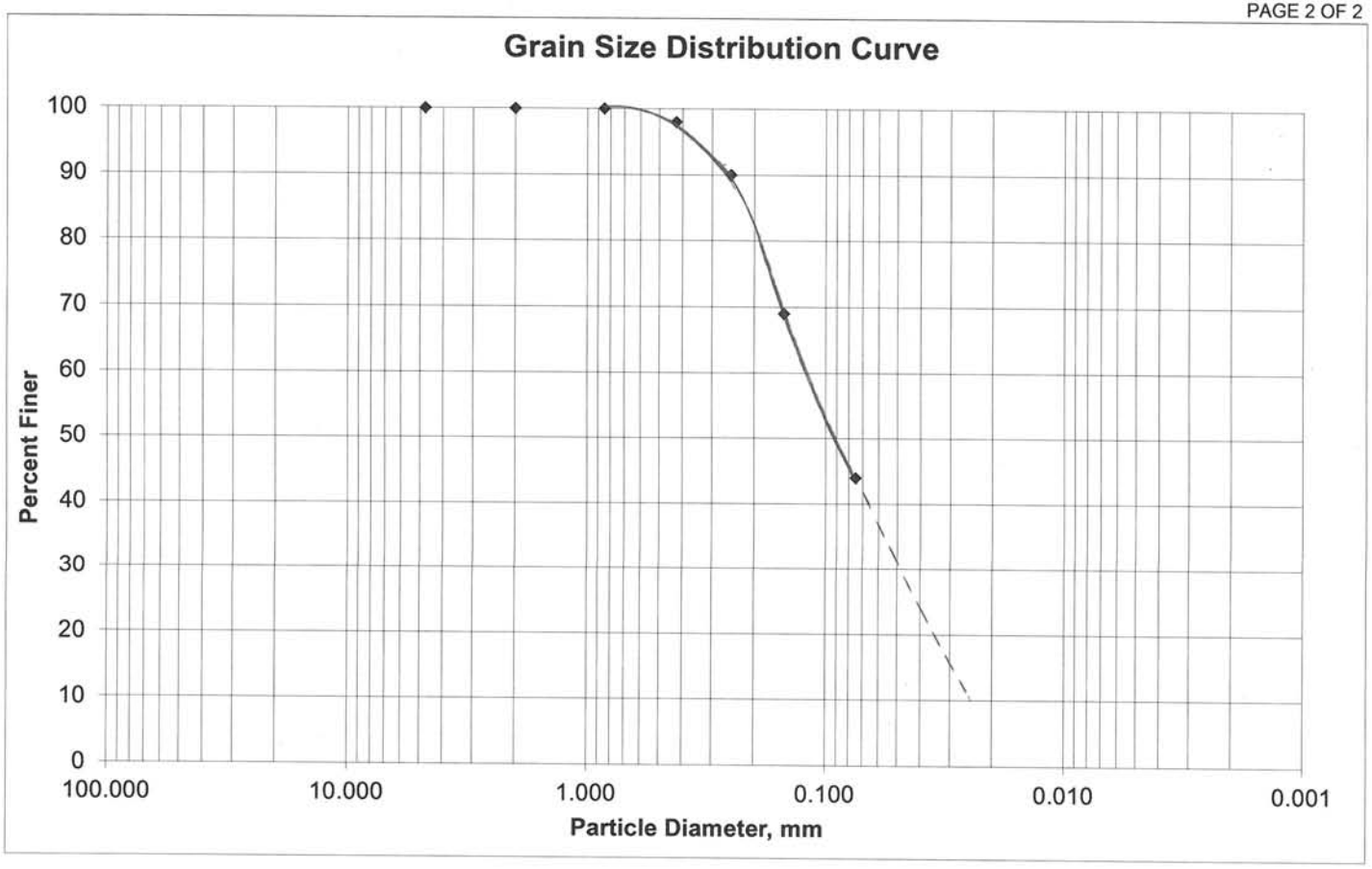
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 12.0-12.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	93
100	0.150	70
200	0.075	47

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.023 mm

D_{50} = 0.09 mm

D_{60} = 0.12 mm

K = 0.0001 (cm/sec)

0.1 (in/hr)

C_u = 5.2

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

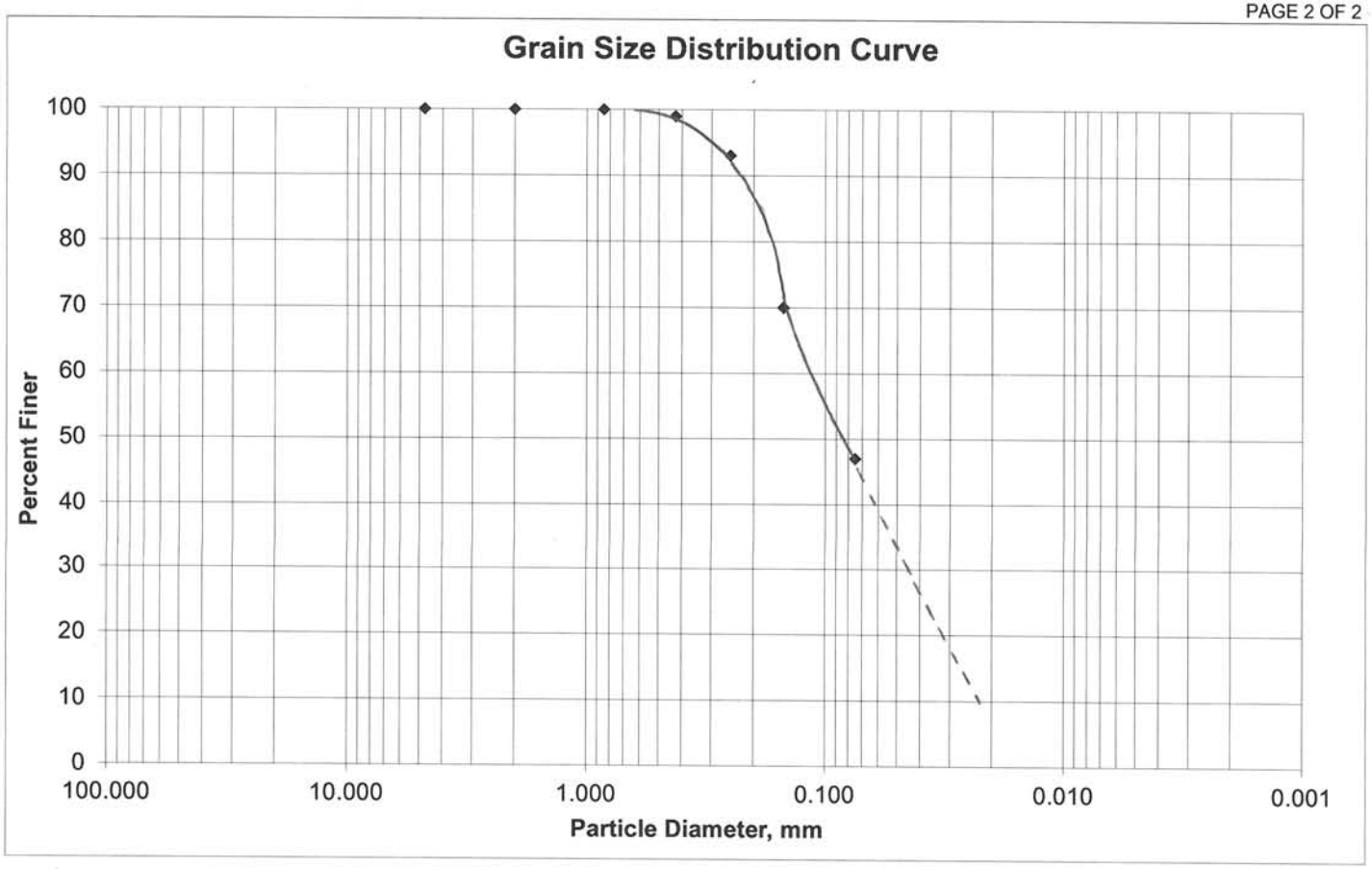
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 12.0-12.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-16 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	92
100	0.150	70
200	0.075	49

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.020 mm

D_{50} = 0.09 mm

D_{60} = 0.13 mm

K = 0.0001 (cm/sec)

0.1 (in/hr)

C_u = 6.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

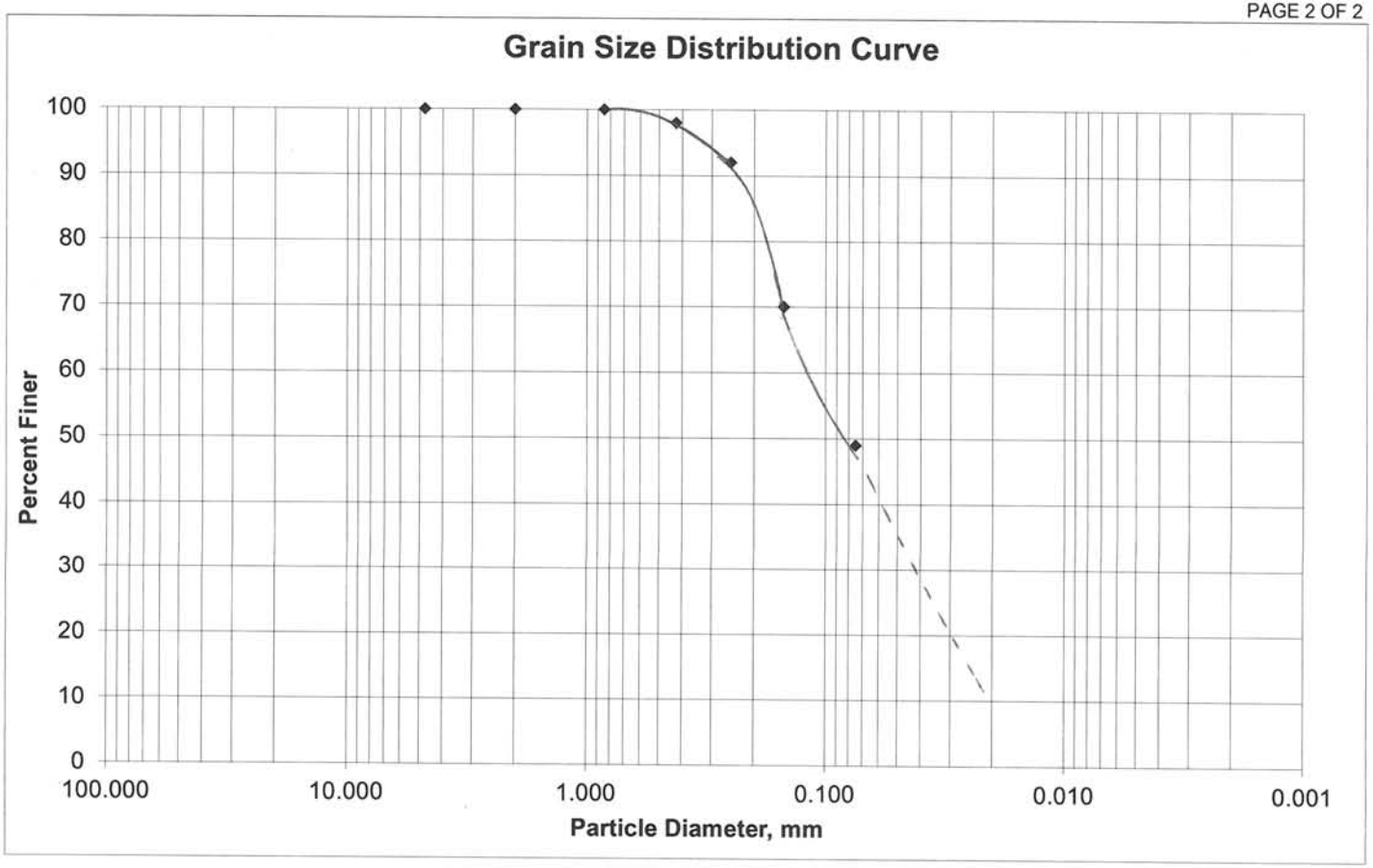
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-16 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

Appendix D

Regulations

NWFWMD (http://www.nwfwmd.state.fl.us/permits/erp/erp_downloads/AH_Engineering.pdf)

Leon County
(http://library.municode.com/HTML/10008/level3/COLA_CH10LADECO_ARTIVENMA.html#TOPTITLE)

Appendix E

Calculations

SEGMENTS 1 AND 2

10 FOOT MULTI-USE TRAIL

RETENTION EXAMPLE

Stormwater RUNOFF from the 10-foot Multi-use Trail
is captured and retained in a storage area located
under the 10-foot Multi-use Trail and also in
the 2-foot wide gravel capture trench

Retention of the 50 year – 24 hour Event

50/24 Rainfall = 9.5”

Volume = 9.5/12 x 10 = 7.5 CF/FT
9.5/12 x 2.0 = 2.0 CF/FT
Required Storage Volume = 9.5 CF/FT

The Theoretical Storage Volume provided is:

2.5’ deep x 12’ x 30% = 9.0 CF/FT
2’ x 6”/12 x 30% = 0.3 CF/FT
9.3 CF/FT

Since the actual construction excavation and backfill will exceed the neat plan lines, the constructed volume will satisfy the requirement.

SEGMENT 3
RETENTION DESIGN EXAMPLE

Leon County's 40 year Continuous Simulation Method is used.

4-Lane Roadway Improvement Westbound

Travel Lanes -2 @ 12'	=	24.00'
Paved Shoulder	=	5.00'
Median Curb	=	2.25'
Multi-use Trail	=	10.00'
Total Impervious	=	41.25'

Treatment Volume Required by Bradfordville Special Requirements:

4" Retention from Impervious Area

Treatment Volume = 4"/12" x 41.25 = 13.75 cubic feet/ foot of roadway

At 30% Void Space in Sand or Gravel:
Storage Volume = 13.75/ 0.30 = 45.83 cubic feet/ foot of roadway

Bannerman Road Anticipated Infiltration Rate is:
Approximately 0.5-1.0 inches per day

Because of the extremely low infiltration rate on the Bannerman Road corridor,
an underground storage volume approximately 2-3 times the required Storage Volume is necessary to meet BSA requirements.

To "fit" within the Right of Way required for the Roadway and Trail improvement, the required underground storage volume was obtained using a combination of sand and gravel and a manufactured underground storage unit.

These units can have up to 94% void area (more than 3 times sand or gravel)

Segment 3 Calculated Infiltration Rates

	Soil Boring ID	Soil Boring Surface Depth ft	Soil Strata Depth ft	Saturated Permeability in/hr	Unsaturated Permeability w/ FS=2 in/day	Soil Strata Depth ft	Saturated Permeability in/hr	Unsaturated Permeability w/ FS=2 in/day	Weighted Unsaturated Permeability in/day	Basin Infiltration Rates in/day
Basin 1	PB-1	N/A	5	0.5	4.00	---	---	---	4.00	4.00
Basin 2	PB-2	214.5	5	0.1	0.80	---	---	---	0.80	0.44
	PB-3	217.5	5	0.01	0.08	---	---	---	0.08	
Basin 3	PB-4	219	5	0.1	0.80	---	---	---	0.80	0.73
	PB-5	208.5	2.5	0.1	0.80	2.5	0.01	0.08	0.44	
	PB-6	206	5	0.1	0.80	---	---	---	0.80	
	PB-7	207	5	0.1	0.80	---	---	---	0.80	
	PB-8	221	5	0.1	0.80	---	---	---	0.80	
Basin 4	PB-9	216.5	5	0.1	0.80	---	---	---	0.80	0.68
	PB-10	211.5	2.5	0.1	0.80	2.5	0.01	0.08	0.44	
	PB-11	213	5	0.1	0.80	---	---	---	0.80	
Basin 5	PB-12	214	5	0.1	0.80	---	---	---	0.80	0.80
	PB-13	213.5	5	0.1	0.80	---	---	---	0.80	
Basin 6	PB-14	215	5	0.1	0.80	---	---	---	0.80	0.80
	PB-15	215	5	0.1	0.80	---	---	---	0.80	
Basin 7	PB-16	224	5	0.1	0.80	---	---	---	0.80	0.80
	PB-17	222.5	5	0.1	0.80	---	---	---	0.80	
Basin 8	PB-18	234	5	0.01	0.08	---	---	---	0.08	0.08

Assumed that pond bottom is below impermeable layer shown in boring for PB-1 approximately 6' below surface. Depth of pond bottom from boring surface assumed to be 5' for all other borings. Depth of permeability range assumed to be 5'.

BANNERMAN ROAD
SEGMENT 3 ALTERNATE A
Composite CN Calculation

Section Width = 165 feet

Existing Conditions CN Calculation

Existing Impervious Width = 2-11' Travel Lanes		22
Existing Pervious Width = 165 -22		143
		165
Pervious Area CN	61	
Impervious Area CN	98	
Pervious - 143 x 59		8723
Impervious - 22 x 98		2156
	Total	10879
Composite CN Number		**65.9**

Proposed Conditions CN Calculation

Westbound Roadway

	Ft
Impervious Width	
Travel Lanes 2@12'	24.00
Paved Shoulder	5.00
Median Curb	2.25
Multi-Use Path	10.00
Subtotal	41.25
Pervious Width	Ft
Median	8.75
Lawn Shoulder	5.00
10' Ditch & Slopes	22.00
Separation	2.00
R/W Ditch (Min)	10.00
Separation	3.00
Subtotal	50.75

Eastbound Roadway

	Ft
Impervious Width	
Travel Lanes 2@12'	24.00
Paved Shoulder	5.00
Median Curb	2.25
Subtotal	31.25
Pervious Width	Ft
Median	8.75
Lawn Shoulder	5.00
10' Ditch & Slopes	22.00
Separation	4.00
R/W Ditch (Min)	0
Separation	2.00
Subtotal	41.75

Total Impervious = 72.50 Ft

Total Pervious = 165 -72.5 92.5 Ft

Composite CN Number

Pervious - 92.5 x 59		5642.5
Impervious - 72.5 x 98		7105
	Total	12747.5
Composite CN Number		**77.3**

Eastbound Storage Swale Recovery Analysis

Input Data:

Composite Curve Number for Non D.C.I.A. =	61.00
D.C.I.A. Area to Pond (Ac) =	0.07
Non D.C.I.A.Area to Pond (Ac) =	0.10
Soil Perc. Rate (in./day) =	0.50

Irrigation Data:

Irrigation Area (Ac.) =		0.00
Irrigation Rate (Inches/Day) =		0.00

Calculated Data:

Soil Storage (S) =	6.39
Initial Abstraction (Ia) =	1.28
Starting Vol. of Water in Pond (Ac-Ft) =	0
Average Irrigation Rate (Ac-Ft)/Day =	0.000
Average Perc Rate (cfs) =	0.001

Stormwater Management Facility Data:

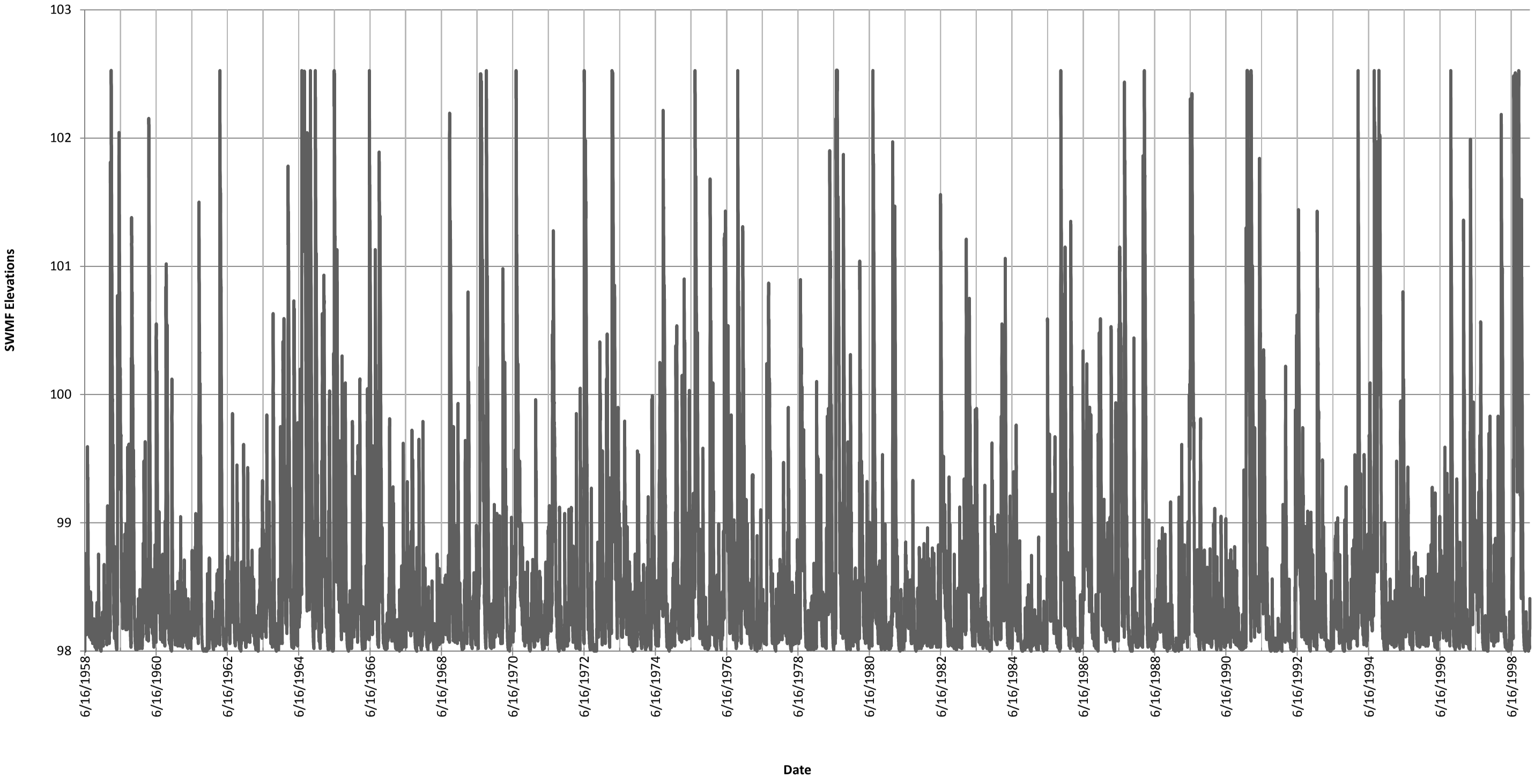
Stage (ft)	Area (Ac)	Volume (Ac-ft)	Σ **Volume (Ac-Ft)**	Perc Rate (Ac-Ft)/Day	Irrigation Rate (Ac-Ft)/Day
98	0.0624	0.00000	0.000	0.000	0.000
99	0.0624	0.01339	0.013	0.003	0.000
100	0.0624	0.01339	0.027	0.003	0.000
100.5	0.0624	0.00658	0.033	0.003	0.000
101	0.0624	0.00653	0.040	0.003	0.000
101.5	0.0656	0.00715	0.047	0.003	0.000
102	0.0687	0.00690	0.054	0.003	0.000
102.75	0.0718	0.00894	0.063	0.003	0.000

Total Rain (Inches) =	2664.0300
Total Impervious Runoff (Ac-Ft) =	15.9842
Total Pervious Runoff (Ac-Ft) =	1.8488
Total Spill Volume (Ac-Ft) =	0.5027
Total Retained Volume (Ac-Ft) =	17.3302
Total Perc'd Volume (Ac-Ft) =	17.3271
Percent Runoff Retained =	**97.18%**

Note:

Top of Retention Volume is at Elev. = 102.750

Eastbound Storage Swale Stage Tracking



Westbound Storage Swale Recovery Analysis (100' roadway section)

Input Data:

Composite Curve Number for Non D.C.I.A. =	61.00
D.C.I.A. Area to Pond (Ac) =	0.10
Non D.C.I.A.Area to Pond (Ac) =	0.12
Soil Perc. Rate (in./day) =	0.50

Irrigation Data:

Irrigation Area (Ac.) =		0.00
Irrigation Rate (Inches/Day) =		0.00

Calculated Data:

Soil Storage (S) = 6.39

Initial Abstraction (Ia) = 1.28

Starting Vol. of Water in Pond (Ac-Ft) = 0

Average Perc Rate (cfs) = 0.001

Average Irrigation Rate (Ac-Ft)/Day = 0.000

Stormwater Management Facility Data:

Stage (ft)	Area (Ac)	Volume (Ac-ft)	**Σ Volume (Ac-Ft)**	Perc Rate (Ac-Ft)/Day	Irrigation Rate (Ac-Ft)/Day
98	0.0624	0.00000	0.000	0.000	0.000
98.5	0.0624	0.00948	0.009	0.003	0.000
99	0.0624	0.01347	0.023	0.003	0.000
100	0.0624	0.02693	0.050	0.003	0.000
100.5	0.0624	0.01335	0.063	0.003	0.000
101	0.0624	0.01341	0.077	0.003	0.000
102	0.0687	0.02005	0.097	0.003	0.000
102.75	0.0734	0.00343	0.100	0.003	0.000

Total Rain (Inches) = 2664.0300

Total Impervious Runoff (Ac-Ft) = 21.0902

Total Pervious Runoff (Ac-Ft) = 2.2532

Total Spill Volume (Ac-Ft) = 0.5668

Total Retained Volume (Ac-Ft) = 22.7766

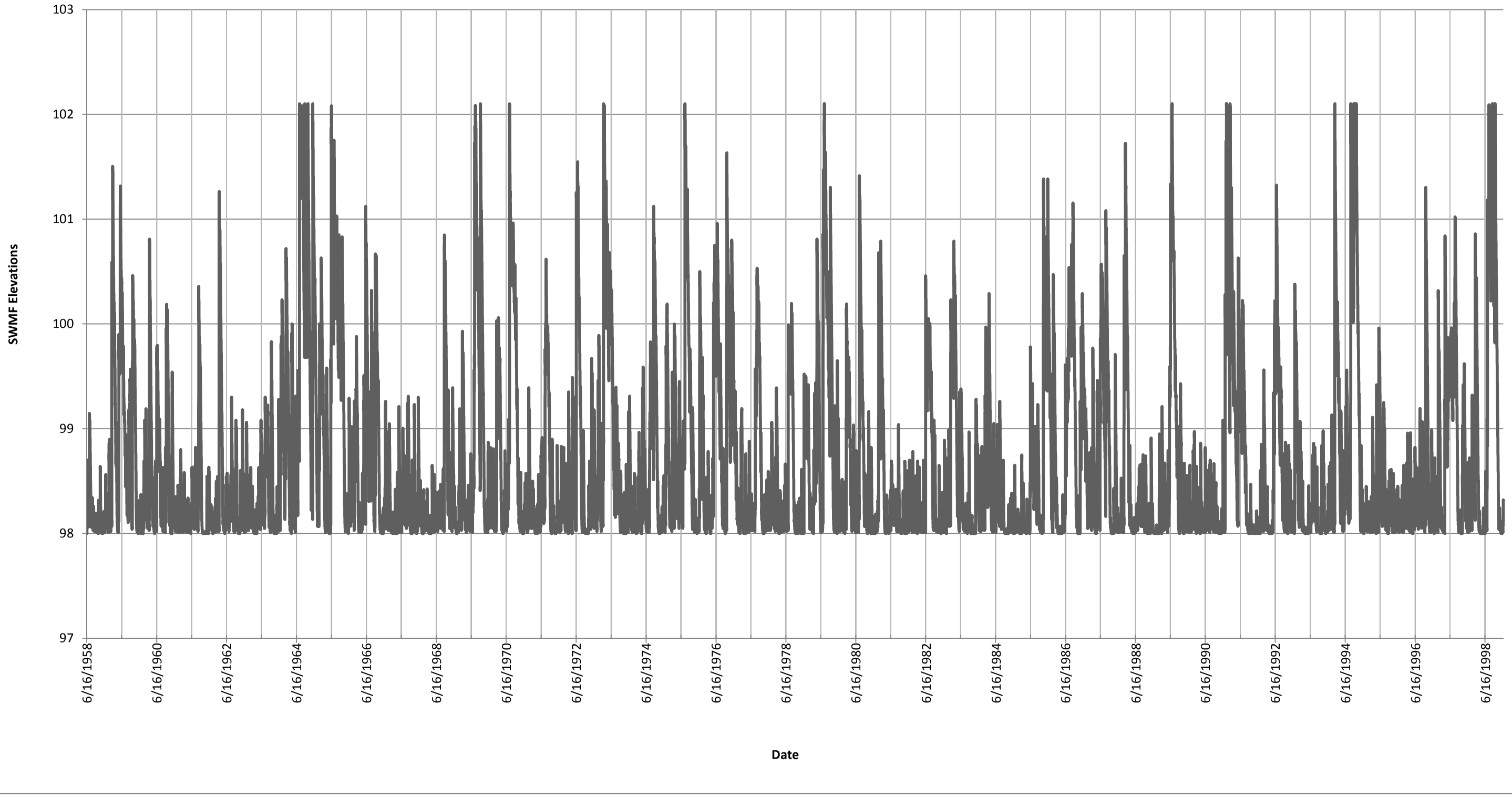
Total Perc'd Volume (Ac-Ft) = 22.7740

Note:

Top of Retention Volume is at Elev. = 102.750

Percent Runoff Retained = 97.57%

Westbound Storage Swale Stage Tracking



Lake Jackson Basin Pond Analysis

Bannerman Road 4-lane section Tekesta to McClure (with Undivided section between Reynolds and Tekesta)

2.10 ac Impervious
2.3 ac grass within R/W
4.64 ac Pond Site

Input Data:

Composite Curve Number for Non D.C.I.A. =	81.70
D.C.I.A. Area to Pond (Ac) =	0.00
Non D.C.I.A.Area to Pond (Ac) =	9.05
Soil Perc. Rate (in./day) =	0.50

Calculated Data:

Soil Storage (S) = 2.24
Initial Abstraction (Ia) = 0.45
Starting Vol. of Water in Pond (Ac-Ft) = 0
Average Perc Rate (cfs) = 0.051

Irrigation Data:

Average Irrigation Rate (Ac-Ft)/Day = 0.000

Irrigation Area (Ac.) =		0.00
Irrigation Rate (Inches/Day) =		0.00

Stormwater Management Facility Data:

Stage (ft)	Area (Ac)	Volume (Ac-ft)	Σ **Volume (Ac-Ft)**	Perc Rate (Ac-Ft)/Day	Irrigation Rate (Ac-Ft)/Day
20	2.78	0	0	0.000	0.000
20.5	2.82	1.40	1.40	0.118	0.000
21	2.87	1.42	2.82	0.120	0.000
21.5	2.92	1.45	4.27	0.122	0.000
22	2.96	1.47	5.74	0.123	0.000
22.5	2.99	1.49	7.23	0.125	0.000
22.75	3.00	0.75	7.98	0.125	0.000
23	3.01	0.75	8.73	0.125	0.000

Total Rain (Inches) = 2664.0300
Total Impervious Runoff (Ac-Ft) = 0.0000
Total Pervious Runoff (Ac-Ft) = 572.8566
Total Spill Volume (Ac-Ft) = 0.0000
Total Retained Volume (Ac-Ft) = 572.8566
Total Perc'd Volume (Ac-Ft) = 572.8259

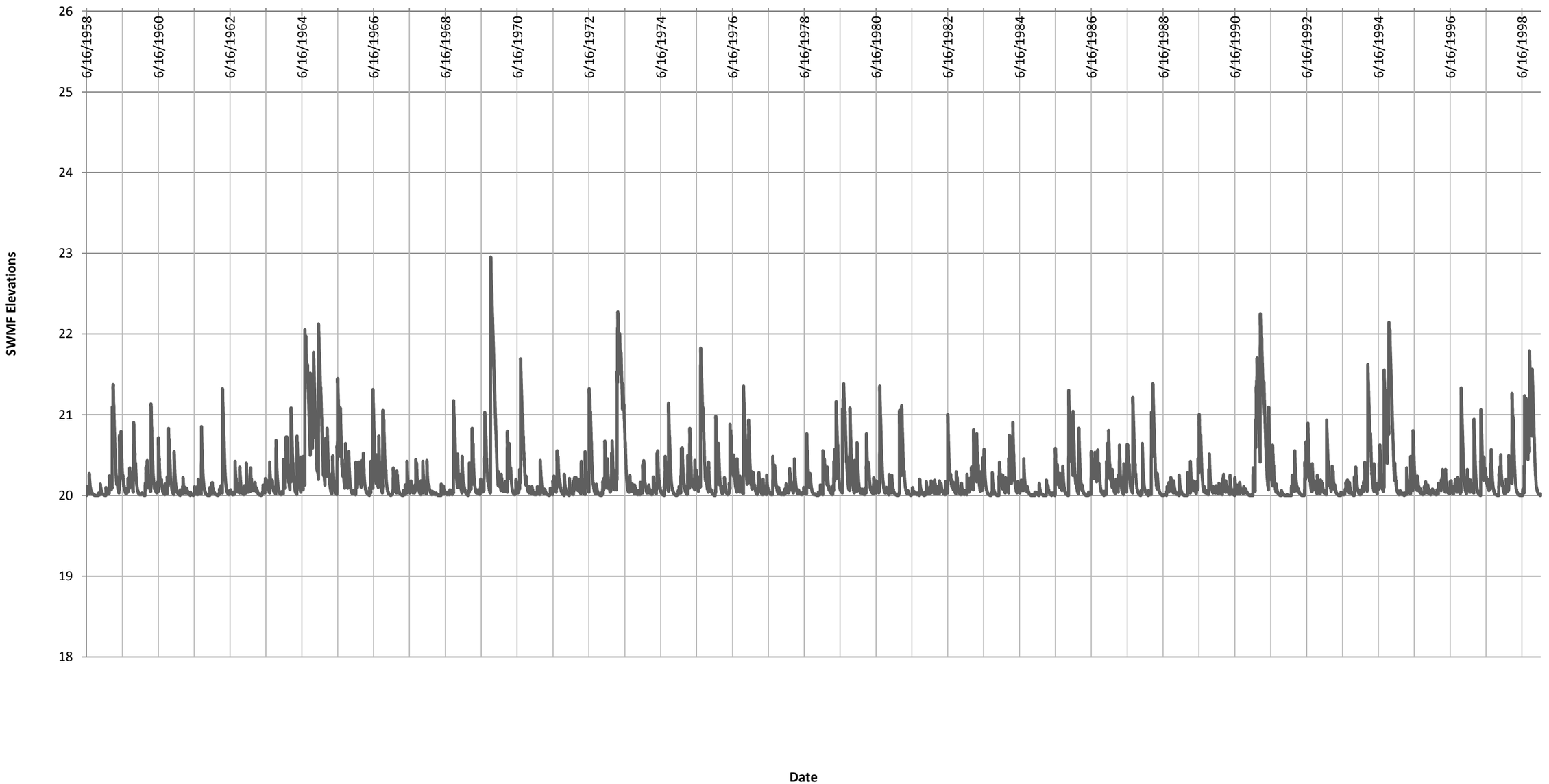
Note:
Top of Retention Volume is at Elev. = 23.000

Percent Runoff Retained = 100.00%

Stormwater Management Facility Operation

Date	Rainfall (inches)	Runoff from **0.00** Acres of D.C.I.A.	Runoff from **9.050** Ac. Non D.C.I.A. **81.700**	Start of Day Pond Volume (Ac-Ft)	Available Volume (Ac-Ft)	Amount of Water\Runoff in Pond After Storm (Ac-Ft)	Spill Volume (Ac-Ft)	Day's Runoff Volume Retained (Ac-Ft)	Day's Perc'd\Irrigated Volume (Ac-Ft)	Day's End Water\Runoff volume in Pond (Ac-Ft)	Maximum One Day Discharged Volume (Ac-Ft)
6/16/1958	0.02	0.000	0.000	0.000	8.730	0.000	0.000	0.000	0.0000	0.000	0.000
6/17/1958	0	0.000	0.000	0.000	8.730	0.000	0.000	0.000	0.0000	0.000	0.000
6/18/1958	1.78	0.000	0.375	0.000	8.730	0.375	0.000	0.375	0.0552	0.319	0.000
6/19/1958	0	0.000	0.000	0.319	8.411	0.319	0.000	0.000	0.0582	0.261	0.000
6/20/1958	0.7	0.000	0.019	0.261	8.469	0.280	0.000	0.019	0.0600	0.220	0.000
6/21/1958	0.01	0.000	0.000	0.220	8.510	0.220	0.000	0.000	0.0598	0.161	0.000
6/22/1958	0.89	0.000	0.055	0.161	8.569	0.216	0.000	0.055	0.0181	0.197	0.000
6/23/1958	0	0.000	0.000	0.197	8.533	0.197	0.000	0.000	0.0166	0.181	0.000
6/24/1958	0	0.000	0.000	0.181	8.549	0.181	0.000	0.000	0.0152	0.166	0.000
6/25/1958	0	0.000	0.000	0.166	8.564	0.166	0.000	0.000	0.0139	0.152	0.000
6/26/1958	0.7	0.000	0.019	0.152	8.578	0.171	0.000	0.019	0.0144	0.157	0.000
6/27/1958	0	0.000	0.000	0.157	8.573	0.157	0.000	0.000	0.0131	0.144	0.000
6/28/1958	0	0.000	0.000	0.144	8.586	0.144	0.000	0.000	0.0120	0.131	0.000
6/29/1958	0	0.000	0.000	0.131	8.599	0.131	0.000	0.000	0.0110	0.120	0.000
6/30/1958	0	0.000	0.000	0.120	8.610	0.120	0.000	0.000	0.0101	0.110	0.000
7/1/1958	0	0.000	0.000	0.110	8.620	0.110	0.000	0.000	0.0093	0.101	0.000
7/2/1958	0	0.000	0.000	0.101	8.629	0.101	0.000	0.000	0.0085	0.093	0.000
7/3/1958	0	0.000	0.000	0.093	8.637	0.093	0.000	0.000	0.0078	0.085	0.000

Stormwater Management Facility Stage Tracking



TR55 Tc Worksheet

SCS

Tc from Median to Swale- Segment 3 Alternate A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.150		0.011		0.011		
Flow length (ft)	=	8.8		31.0		0.0		
Two-year 24-hr precip. ((in))	=	4.60		4.60		0.00		
Land slope (%)	=	4.00		2.00		0.00		
Travel Time (min)	**=**	**0.89**	**+**	**0.40**	**+**	**0.00**	**=**	**1.28**
Shallow Concentrated Flow								
Flow length (ft)	=	3.00		0.00		0.00		
Watercourse slope (%)	=	6.00		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	3.95		0.00		0.00		
Travel Time (min)	**=**	**0.01**	**+**	**0.00**	**+**	**0.00**	**=**	**0.01**
Channel Flow								
X sectional flow area ((sqft))	=	0.00		0.00		0.00		
Wetted perimeter ((ft))	=	0.00		0.00		0.00		
Channel slope (%)	=	0.00		0.00		0.00		
Manning's n-value	=	0.015		0.015		0.015		
Velocity (ft/s)	=	0.00		0.00		0.00		
Flow length (ft)	=	0.0		0.0		0.0		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 1.00 min

Sample adICPR Calculation

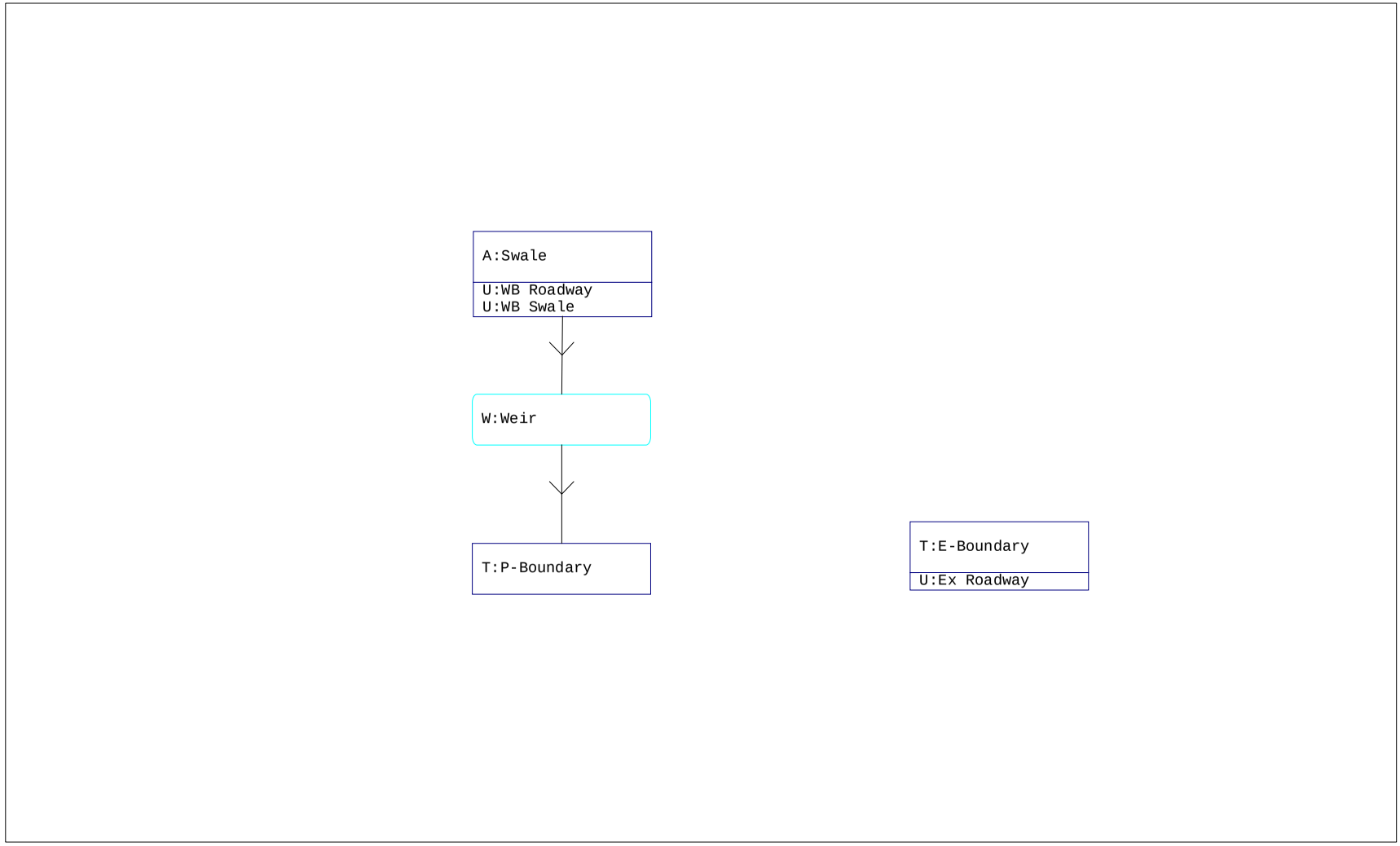
Pre-Post Rate Analysis

Westbound Roadway Swale – 100 feet of roadway

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



Interconnected Channel and Pond Routing Model (ICPR) ©2002 Streamline Technologies, Inc.

```
================================================================================
==== Basins ====================================================================
================================================================================

        Name: Ex Roadway              Node: E-Boundary            Status: Onsite
       Group: Existing                Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh484                  Peaking Factor: 484.0
         Rainfall File: Scsiii             Storm Duration(hrs): 24.00
   Rainfall Amount(in): 8.520                Time of Conc(min): 10.00
              Area(ac): 0.210                   Time Shift(hrs): 0.00
          Curve Number: 66.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

CN = 61 for pervious, assume 12.25' pavement width, 100' length, remainder pervious, ignore wet ditch bottom

--------------------------------------------------------------------------------------------------
        Name: WB Roadway              Node: Swale                 Status: Onsite
       Group: Proposed                Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh484                  Peaking Factor: 484.0
         Rainfall File: Scsiii             Storm Duration(hrs): 24.00
   Rainfall Amount(in): 8.520                Time of Conc(min): 10.00
              Area(ac): 0.095                   Time Shift(hrs): 0.00
          Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

CN = 61 for pervious, assume 31.25' pavement width (2-12' lanes, 5' paved shoulder, C & G)  with 10' trail, 100' length

--------------------------------------------------------------------------------------------------
        Name: WB Swale                Node: Swale                 Status: Onsite
       Group: Proposed                Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh484                  Peaking Factor: 484.0
         Rainfall File: Scsiii             Storm Duration(hrs): 24.00
   Rainfall Amount(in): 8.520                Time of Conc(min): 10.00
              Area(ac): 0.117                   Time Shift(hrs): 0.00
          Curve Number: 66.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

CN = 61 for pervious, 70' length, swale bottom assumed wet, remainder pervious

================================================================================
==== Nodes =====================================================================
================================================================================

      Name: E-Boundary          Base Flow(cfs): 0.000          Init Stage(ft): 97.000
     Group: Existing                                         Warn Stage(ft): 102.000
      Type: Time/Stage



      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          97.000
         240.00          97.000

--------------------------------------------------------------------------------------------------
      Name: P-Boundary          Base Flow(cfs): 0.000          Init Stage(ft): 97.000
     Group: Proposed                                         Warn Stage(ft): 102.000
      Type: Time/Stage



      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          97.000
         240.00          97.000

--------------------------------------------------------------------------------------------------
      Name: Swale               Base Flow(cfs): 0.000          Init Stage(ft): 100.000
     Group: Proposed                                         Warn Stage(ft): 102.000
      Type: Stage/Area

Bottom of swale at Elev 100.  Storage cells below.  Assume storage cells full.
Assume 70' x 8' (avg) bottom area, w/ 1:3 and 1:4 side slopes, ignore volume in ends at ditch blocks

      Stage(ft)        Area(ac)
--------------- ---------------
        100.000          0.0130
        101.000          0.0240
        102.000          0.0390

================================================================================
==== Weirs =====================================================================
================================================================================

        Name: Weir                From Node: Swale
       Group: Proposed              To Node: P-Boundary
        Flow: Both                    Count: 1
        Type: Vertical: Mavis      Geometry: Trapezoidal
```

```
           Bottom Width(ft): 0.00
        Left Side Slope(h/v): 0.58
       Right Side Slope(h/v): 0.58
                  Invert(ft): 101.000
       Control Elevation(ft): 101.000
      Struct Opening Dim(ft): 9999.00
                                          TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
          Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600


================================================================================
==== Hydrology Simulations =====================================================
================================================================================

         Name: 25yr  1hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25yr  1hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 3.60

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           1.00

--------------------------------------------------------------------------------------------------------
         Name: 25yr  2hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25yr  2hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 4.90

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           1.00

--------------------------------------------------------------------------------------------------------
         Name: 25yr  4hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25yr  4hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 6.00

Time(hrs)       Print Inc(min)
--------------- ---------------
8.000           1.00

--------------------------------------------------------------------------------------------------------
         Name: 25yr  8hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25yr  8hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 7.20

Time(hrs)       Print Inc(min)
--------------- ---------------
12.000          1.00

--------------------------------------------------------------------------------------------------------
         Name: 25yr 24hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25yr 24hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          1.00

================================================================================
==== Routing Simulations =======================================================
================================================================================

         Name: 25 yr  1 hr         Hydrology Sim: 25yr  1hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25 yr  1 hr.I32

      Execute: Yes         Restart: No           Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
```

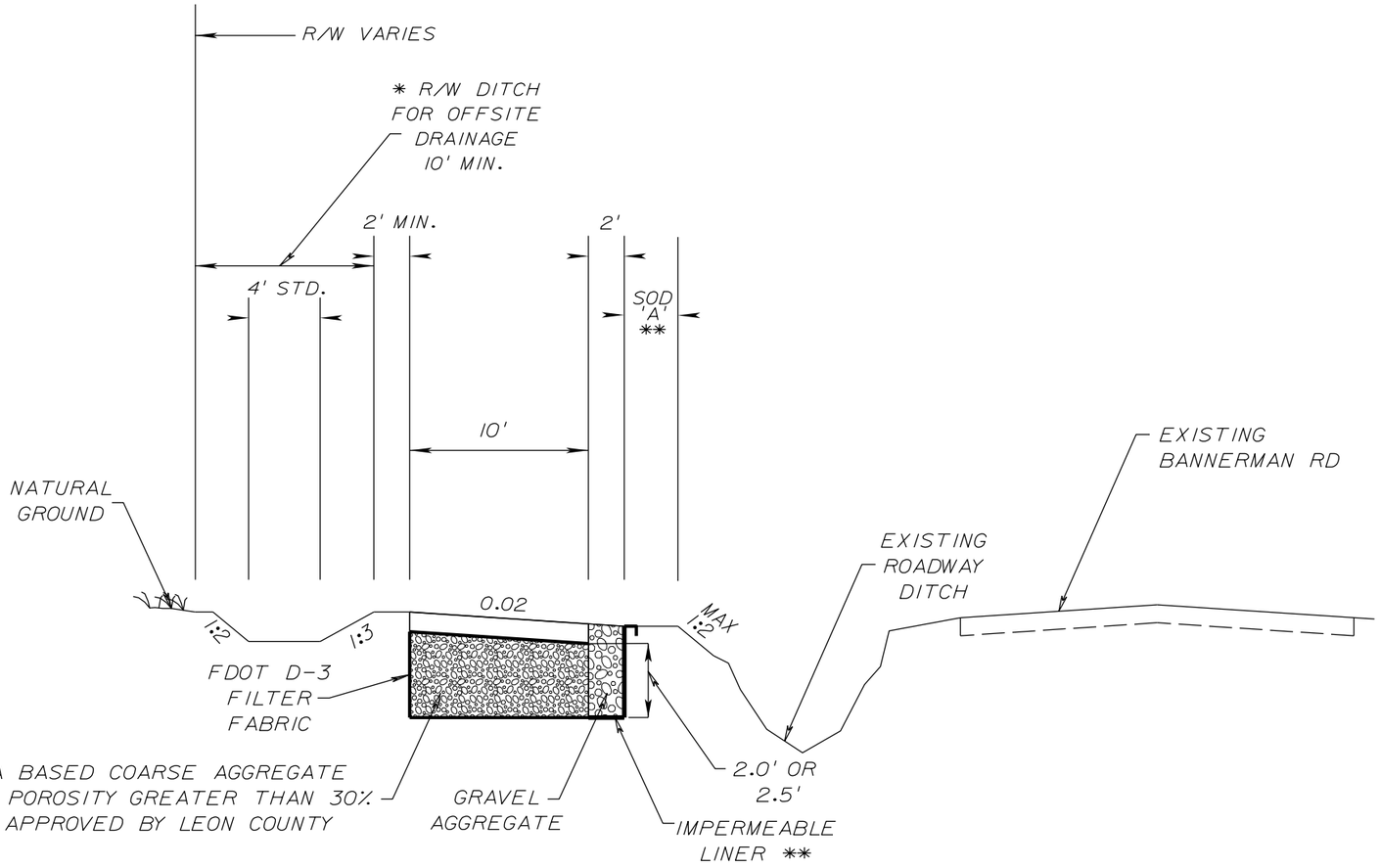
```
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                   End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           1.000

Group           Run
--------------- -----
Existing        Yes
Proposed        Yes


-------------------------------------------------------------------------------------------------------
         Name: 25 yr  2 hr         Hydrology Sim: 25yr  2hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25 yr  2 hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                   End Time(hrs): 6.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           1.000

Group           Run
--------------- -----
Existing        Yes
Proposed        Yes


-------------------------------------------------------------------------------------------------------
         Name: 25 yr  4 hr         Hydrology Sim: 25yr  4hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25 yr  4 hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                   End Time(hrs): 8.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
8.000           1.000

Group           Run
--------------- -----
Existing        Yes
Proposed        Yes


-------------------------------------------------------------------------------------------------------
         Name: 25 yr  8 hr         Hydrology Sim: 25yr  8hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\ICPR\25 yr  8 hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                   End Time(hrs): 12.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
12.000          1.000

Group           Run
--------------- -----
Existing        Yes
Proposed        Yes


-------------------------------------------------------------------------------------------------------
```

```
         Name: 25 yr 24 hr         Hydrology Sim: 25yr 24hr
     Filename: T:\Bannerman\2  DESIGN\Drainage\25 yr 24 hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          1.000

Group           Run
--------------- -----
Existing        Yes
Proposed        Yes
```

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
E-Boundary	Existing	25 yr 1 hr	0.00	97.00	102.00	0.0000	0	0.63	0.67	0.00	0.00
E-Boundary	Existing	25 yr 2 hr	0.00	97.00	102.00	0.0000	0	1.12	1.14	0.00	0.00
E-Boundary	Existing	25 yr 4 hr	0.00	97.00	102.00	0.0000	0	2.12	1.39	0.00	0.00
E-Boundary	Existing	25 yr 8 hr	0.00	97.00	102.00	0.0000	0	4.13	1.43	0.00	0.00
E-Boundary	Existing	25 yr 24 hr	0.00	97.00	102.00	0.0000	0	12.25	0.81	0.00	0.00
P-Boundary	Proposed	25 yr 1 hr	0.00	97.00	102.00	0.0000	0	1.00	0.17	0.00	0.00
P-Boundary	Proposed	25 yr 2 hr	0.00	97.00	102.00	0.0000	0	1.37	0.44	0.00	0.00
P-Boundary	Proposed	25 yr 4 hr	0.00	97.00	102.00	0.0000	0	2.30	0.63	0.00	0.00
P-Boundary	Proposed	25 yr 8 hr	0.00	97.00	102.00	0.0000	0	4.26	0.86	0.00	0.00
P-Boundary	Proposed	25 yr 24 hr	0.00	97.00	102.00	0.0000	0	12.33	0.80	0.00	0.00
Swale	Proposed	25 yr 1 hr	1.00	101.43	102.00	0.0050	1325	0.60	1.65	1.00	0.17
Swale	Proposed	25 yr 2 hr	1.37	101.62	102.00	0.0050	1448	1.12	2.04	1.37	0.44
Swale	Proposed	25 yr 4 hr	2.30	101.71	102.00	0.0050	1512	2.12	2.12	2.30	0.63
Swale	Proposed	25 yr 8 hr	4.26	101.81	102.00	0.0050	1573	4.12	1.94	4.26	0.86
Swale	Proposed	25 yr 24 hr	12.33	101.79	102.00	0.0050	1560	12.24	1.00	12.33	0.80

Appendix F

Stormwater Management Concepts



* NOTE: R/W DITCH TO BE PROVIDED ONLY WHEN SHOWN IN THE CONSTRUCTION PLANS.

** NOTE: IMPERMEABLE LINER IS REQUIRED WHEN 'A' IS LESS THAN 5' AND THE TRENCH BOTTOM IS MORE THAN 5' ABOVE THE ROADWAY DITCH.

N.T.S.

TYPICAL CROSS SECTION VIEW PEDESTRIAN FACILITY SUB-BASE (R/W DITCH SHOWN)

SEGMENTS 1 & 2
MULTI-USE TRAIL
TYPICAL AGGREGATE SUB-BASE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

EDWARD G. RINGE, P.E.
P.E. LICENSE NUMBER 13580
THE LPA GROUP INCORPORATED
A Unit of Michael Baker Corporation
1320 EXECUTIVE CENTER DRIVE, SUITE 100
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 00004307

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

DRAINAGE DETAILS SEGMENTS 1 & 2

SHEET NO.

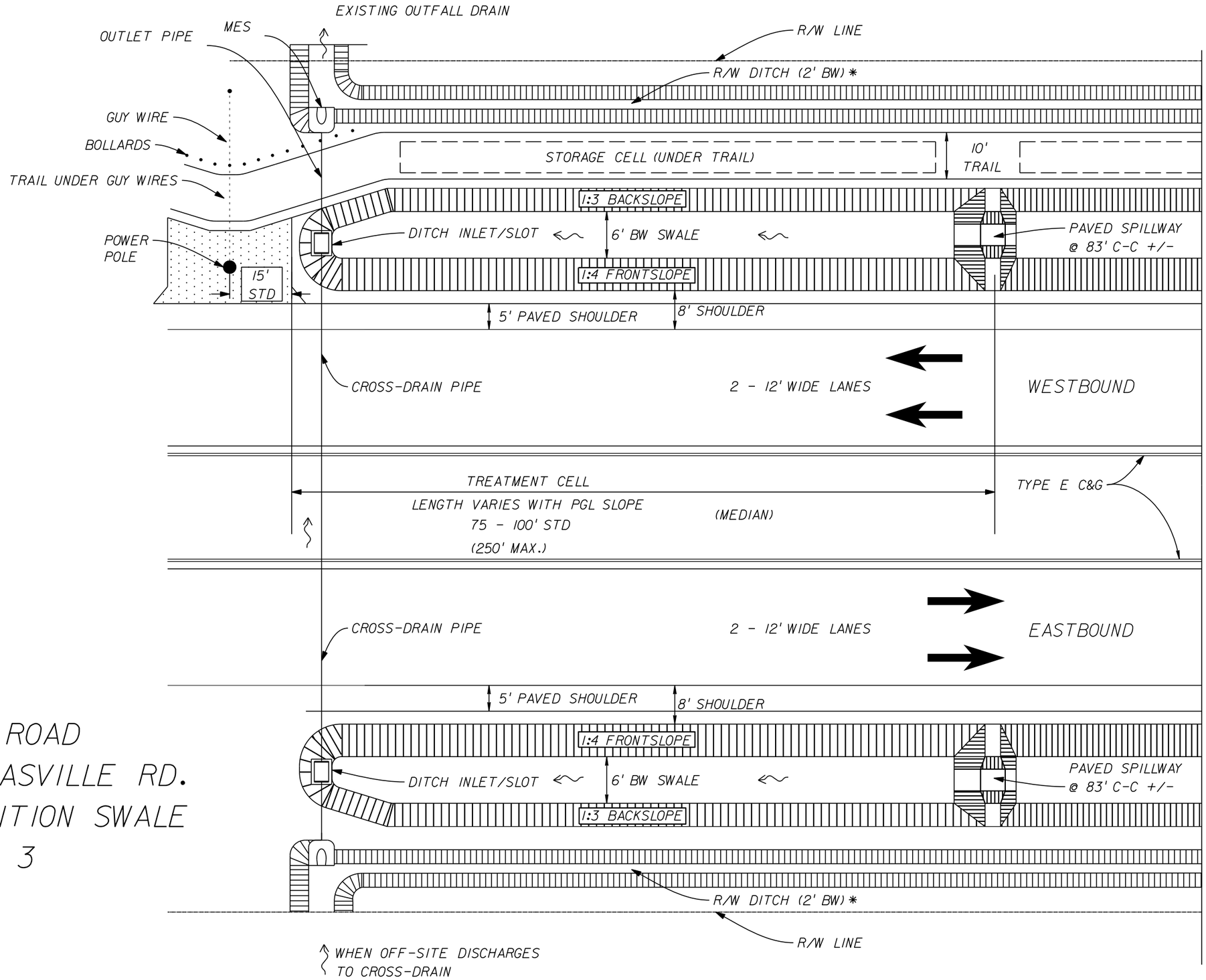
STABILIZED

NOTES:

POWER POLES ARE 300' APART

* TYPICALLY ONLY ON ONE SIDE AT ANY LOCATION

DA = 300 LF OF PROJECT
R/W = 81' LT, 67' RT
IMP. = 41' LT, 31' RT



BANNERMAN ROAD
TEKESTA TO THOMASVILLE RD.
CONCEPTUAL RETENTION SWALE
SEGMENT 3
NTS

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

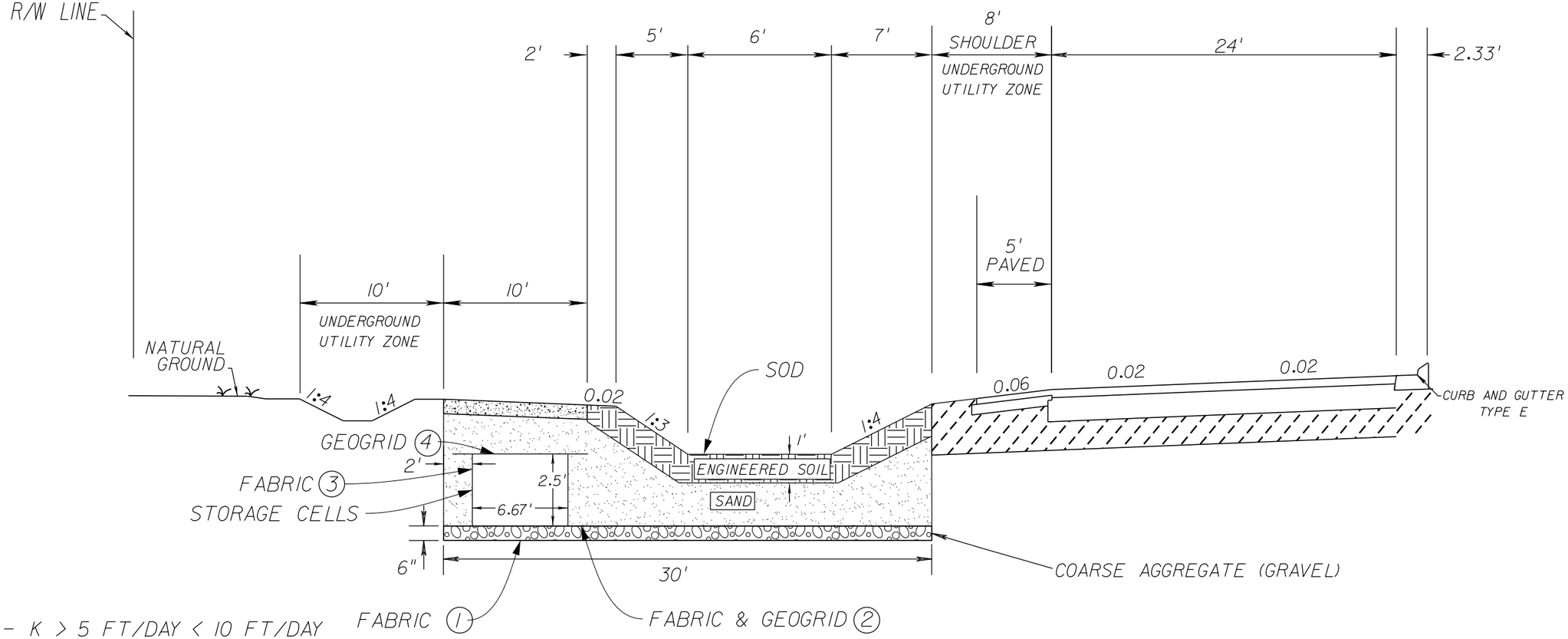
EDWARD G. RINGE, P.E.
P.E. LICENSE NUMBER 13580
THE LPA GROUP INCORPORATED
A Unit of Michael Baker Corporation
1320 EXECUTIVE CENTER DRIVE, SUITE 100
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 00004307

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

DRAINAGE DETAILS SEGMENT 3

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



MATERIALS:

ENGINEERED SOIL - K > 5 FT/DAY < 10 FT/DAY

SAND - A-3 (<8% (-)200) 30% YIELD

GRAVEL - WASHED GRAVEL #57 GRADE - 30% YIELD

GEOGRID - TENSAR BX1200 OR EQUAL

FILTER FABRIC (GEOTEXTILE) - FDOT D-3

STORAGE CELLS - RAINSTORE^{3} OR EQUAL

SOD -

CELL STORAGE:	2.5' * 6.67' * 94% =	15.67 CF/LF
COARSE AGGR. STORAGE:	0.5' * 30' * 30% =	4.50 CF/LF
FINE AGGR. STORAGE:	2.5' * 23.33' * 30% =	17.50 CF/LF
TOTAL STORAGE:		37.67 CF/LF

(1) Extends continuously around sand and gravel (bottom & sides)

(2) Extends width of gravel layer

(3) Extends both sides & top of cells

(4) Extends across cells; two layers above cells. (one directly on cell, 2nd on top of fabric 20" past cells on both sides

BANNERMAN ROAD
TEKESTA TO THOMASVILLE RD.
WESTBOUND SWALE
SEGMENT 3
STORAGE CELL DETAIL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

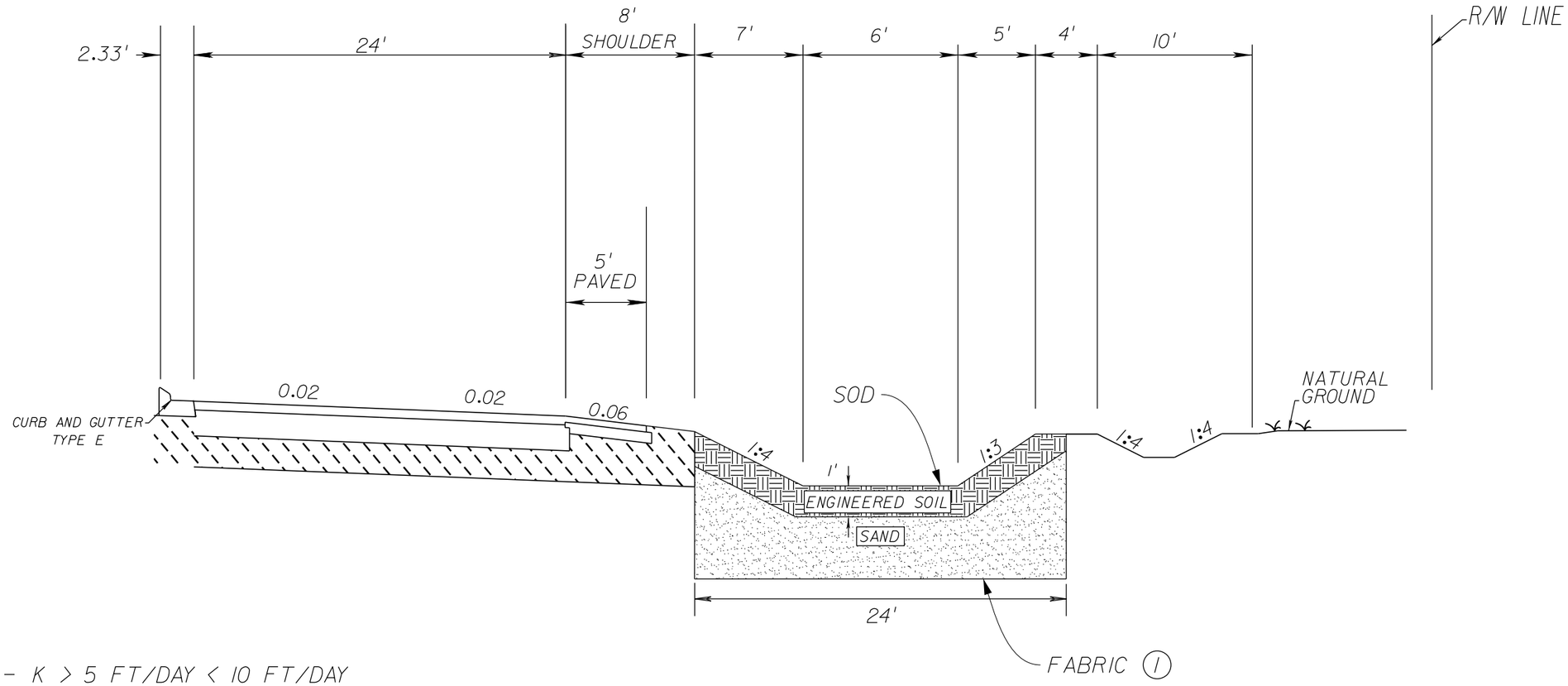
EDWARD G. RINGE, P.E.
P.E. LICENSE NUMBER 13580
THE LPA GROUP INCORPORATED
A Unit of Michael Baker Corporation
1320 EXECUTIVE CENTER DRIVE, SUITE 100
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 00004307

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

DRAINAGE DETAILS
SEGMENT 3

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



MATERIALS:

ENGINEERED SOIL - K > 5 FT/DAY < 10 FT/DAY

SAND - A-3 (<8% (-)200) 30% YIELD

FILTER FABRIC (GEOTEXTILE) - FDOT D-3

SOD -

FINE AGGR. STORAGE:	4' * 20' * 30% = 24.0 CF/LF
TOTAL STORAGE:	24.0 CF/LF

(1) Extends continuously around sand (bottom & sides)

BANNERMAN ROAD
TEKESTA TO THOMASVILLE RD.
EASTBOUND SWALE
SEGMENT 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

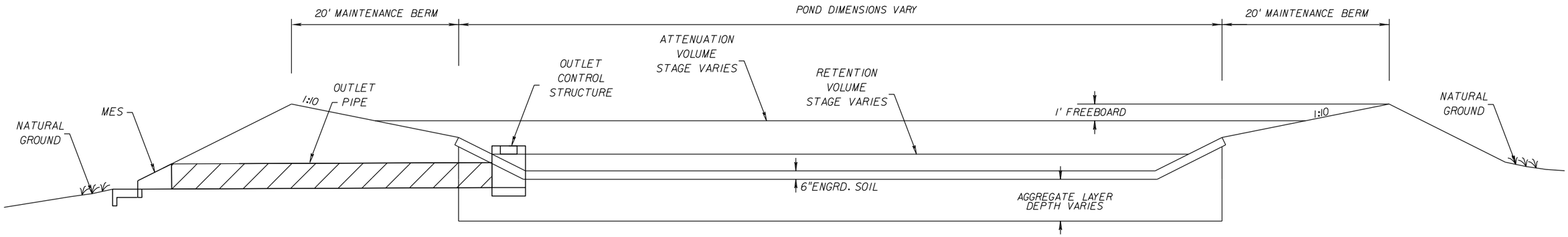
EDWARD G. RINGE, P.E.
P.E. LICENSE NUMBER 13580
THE LPA GROUP INCORPORATED
A Unit of Michael Baker Corporation
1320 EXECUTIVE CENTER DRIVE, SUITE 100
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 00004307

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

DRAINAGE DETAILS
SEGMENT 3

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



TYPICAL POND CROSS SECTION
BANNERMAN ROAD

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

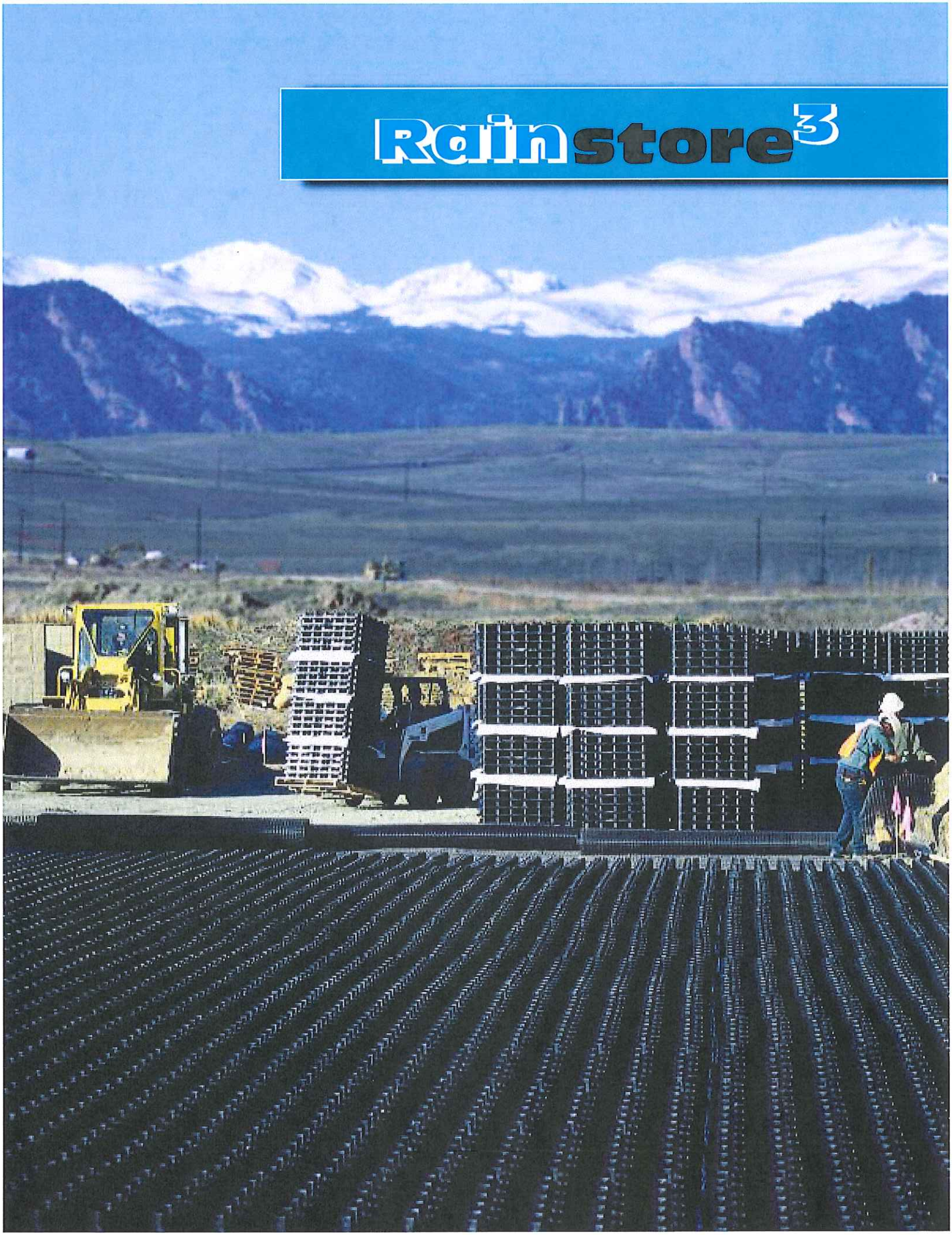
EDWARD G. RINGE, P.E.
P.E. LICENSE NUMBER 13580
THE LPA GROUP INCORPORATED
A Unit of Michael Baker Corporation
1320 EXECUTIVE CENTER DRIVE, SUITE 100
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 00004307

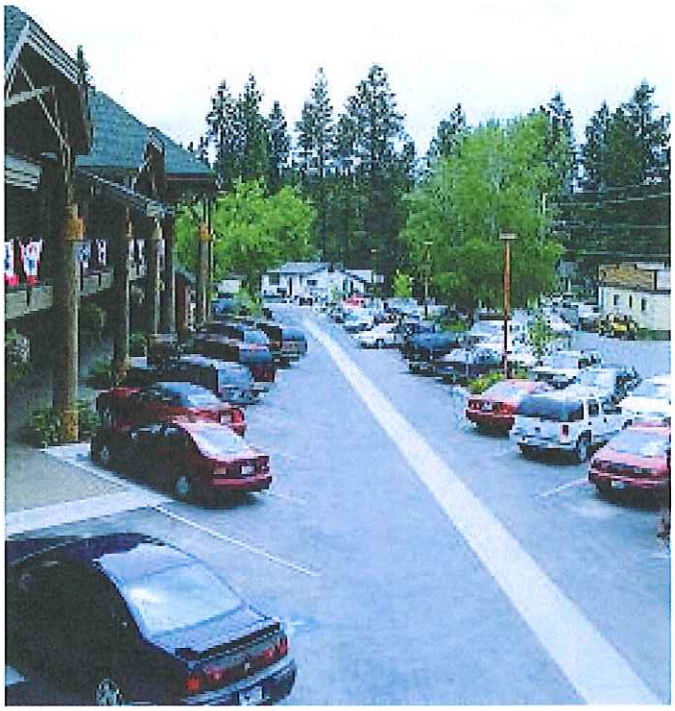
LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

POND DETAIL

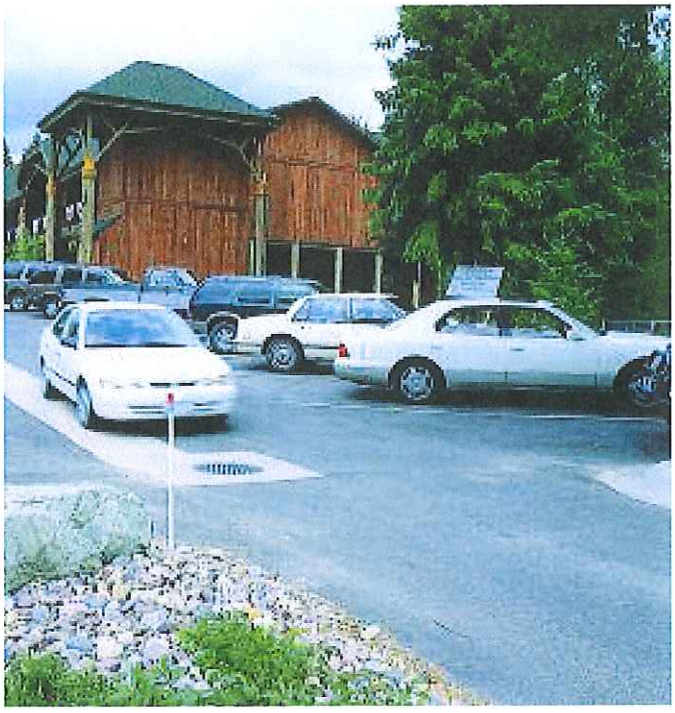
SHEET NO.

Rainstore^3



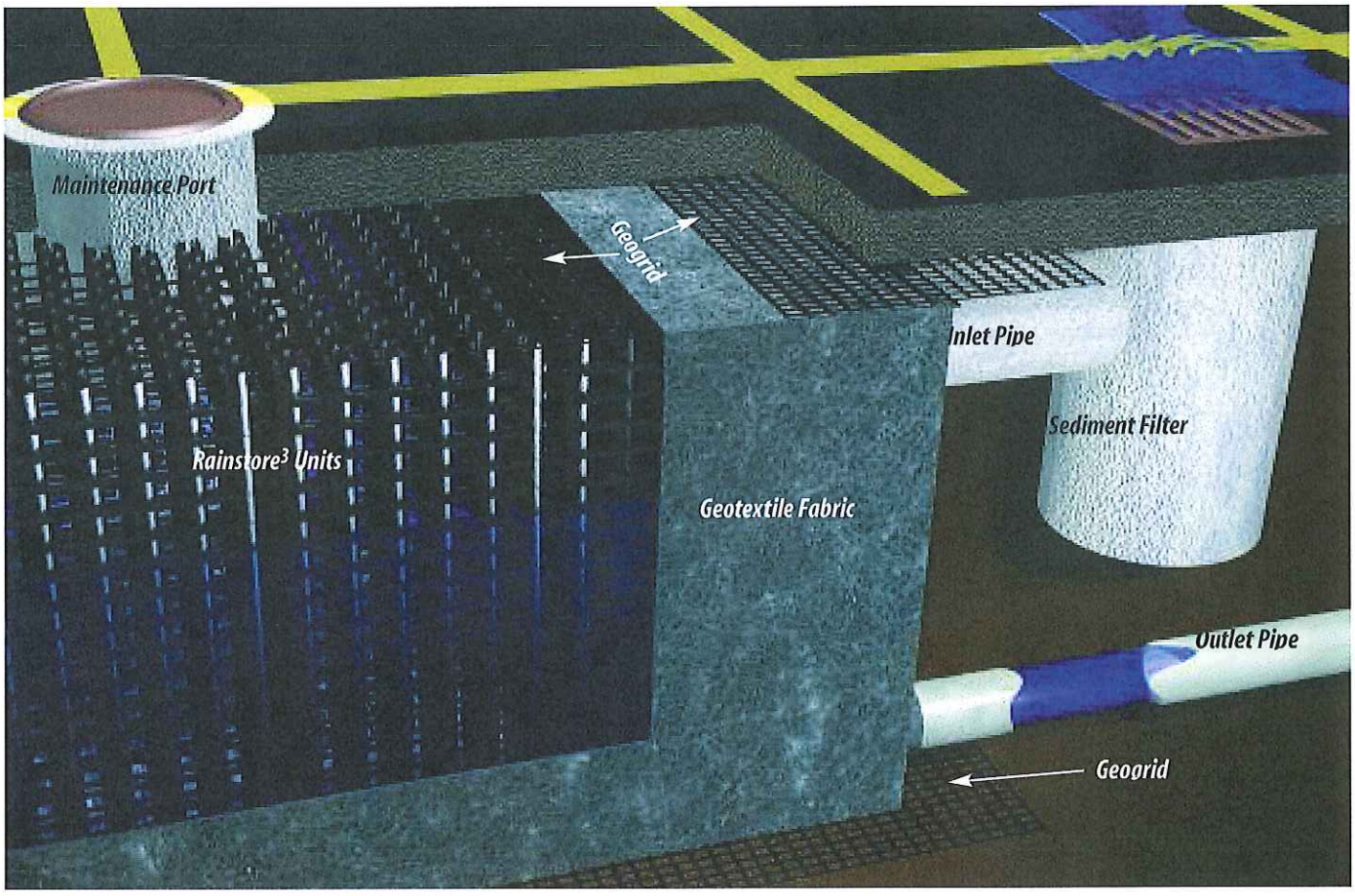


On the cover: Rainstore³ chamber under parking lot, Broomfield, CO. Without Rainstore³'s high water storage capacity at shallow depths, the flexibility in design, and the convenience of exfiltration, the owners of this site would have been unable to develop this site and would have been forced to find a different location for their new construction.



Above: Two views of a completed RS³ install under a parking lot in Big Fork, MT. Parking lot and off-street bays for approximately 48 cars, drains into a 26,250-gallon Rainstore³ stormwater detention structure. Diagonal parking is graded toward the center concrete strip, which drains toward the catch basin.

Below: Graphic representation of asphalt parking lot with Rainstore³ detention showing individual components. Drawing not to scale.



NOW IT IS POSSIBLE!

Invisible Structures, Inc., (ISI) has created a new class of subsurface water storage system, Rainstore^3 (RS^3). It is not pipe or arched chamber, but a structure with strength throughout its shape. The unique design places the plastic entirely in compression rather than bending or tension, resulting in an excess of H-20 loading, and high void storage volume of 94%! Minimum cover is only 0.3 meter (12″).

The structure can be as shallow as 0.1 meter (4″) or as deep as 2.5 meters (94″), and with any length and width in 1 m (40″) increments. Rainstore^3 eliminates site restrictions by conforming to custom project requirements.

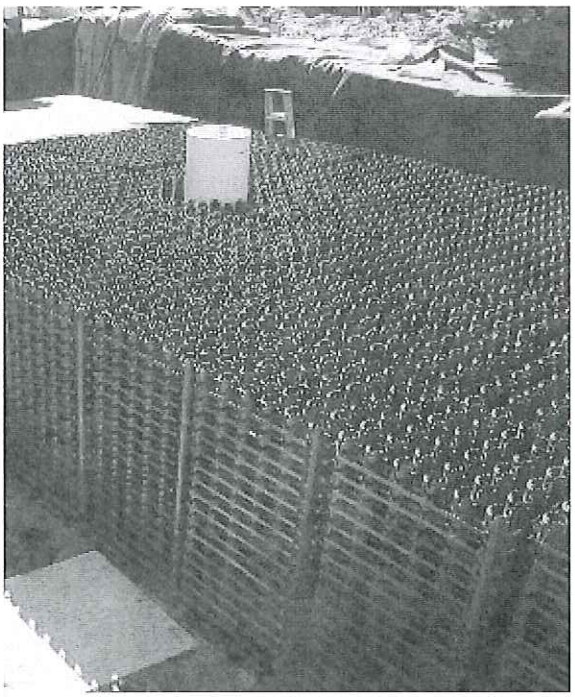
RS^3 does not require any stone backfill between structures. Calculating the void (storage) volume is as simple as dividing storage demand by 94%. This means significant savings in amount of excavation, soil transport, imported stone, installation time, and labor.

Rainstore^3 can be utilized for long-term water storage for irrigation, fire protection, and potable applications by encasing the structures in an impervious liner.

Porous lining materials around RS^3 offer 100% surface area coverage for water infiltration/exfiltration.

Above: Nearly completed installation of a stormwater detention system at a gas station in Nampa, ID. This site has three separate Rainstore^3 chambers to provide the necessary water storage. This photo shows the catch basin and curbing for one of the chambers. Asphalt will cover the visible gravel base.

Below: Installation of a water harvesting application in Santa Fe, NM at the Santa Fe Greenhouse. Rain water is captured and re-used for irrigating the greenhouse plants - saving on the cost of using city water.



STORMWATER QUALITY IS OLD BUSINESS

Company Background and Product Line

Invisible Structures, Inc., has been in the stormwater management business since 1982 with our porous paving systems Grasspave^2 and Gravelpave^2, ring and grid structures for grass and gravel drivable surfaces. Large rolls sizes cover areas quickly while either protecting grass roots from compaction or containing small gravel to eliminate gravel migration. These products have extensive design brochures that cover all aspects from project photographs to latest technology and specifications. Check our web site www.invisiblestructures.com for a full display of information and downloadable details.

Draincore^2 (DC^2) collects excess irrigation and rainfall from recreational grass surfaces such as lawns, sports fields, and bio-swales, and transports filtered water to RS^3. This water may be recycled for irrigation or other uses. Draincore^2 conveys water in a shallow horizontal plane, eliminating trenching and backfill requirements of pipe.

Slopetame^2 (ST^2) is a three dimensional soil, vegetation, pre-vegetation containment mat used to reduce soil loss due to water erosion on slopes, river banks, channels, and bio-swales. Crossbars between rings serve to prevent rill erosion. ST^2 provides support for grasses and a variety of plant material whose roots furnish natural fibrous anchorage. ST^2 bio-swales will help clean debris and pollutants from stormwater prior to entering Rainstore^3.

RS^3 evolved from the ring and grid concept by allowing stackability to greater depths, and increased lateral compressive strength to resist deep soil pressures. The 94% void capacity was attained for RS^3 while satisfying structural criteria.

Water Quality Background

Water quality is critical and must be considered when dealing with stormwater management. In the past, point-source pollution (contaminates from a concentrated source) was of primary concern. Today, non-point source pollution (contaminates from a large area such as a parking lot) is important due to its magnitude and frequency.

The EPA has regulated point source pollution for years and is now implementing strict regulations to control non-point source pollution, which is cumulative and presents long term negative impacts upon our water resources.

Stormwater traveling across hard surfaces will collect contaminates from hydrocarbons to solid waste. The most effective pollution control incorporates treatment at the point of origin before reaching community waterways or water tables.

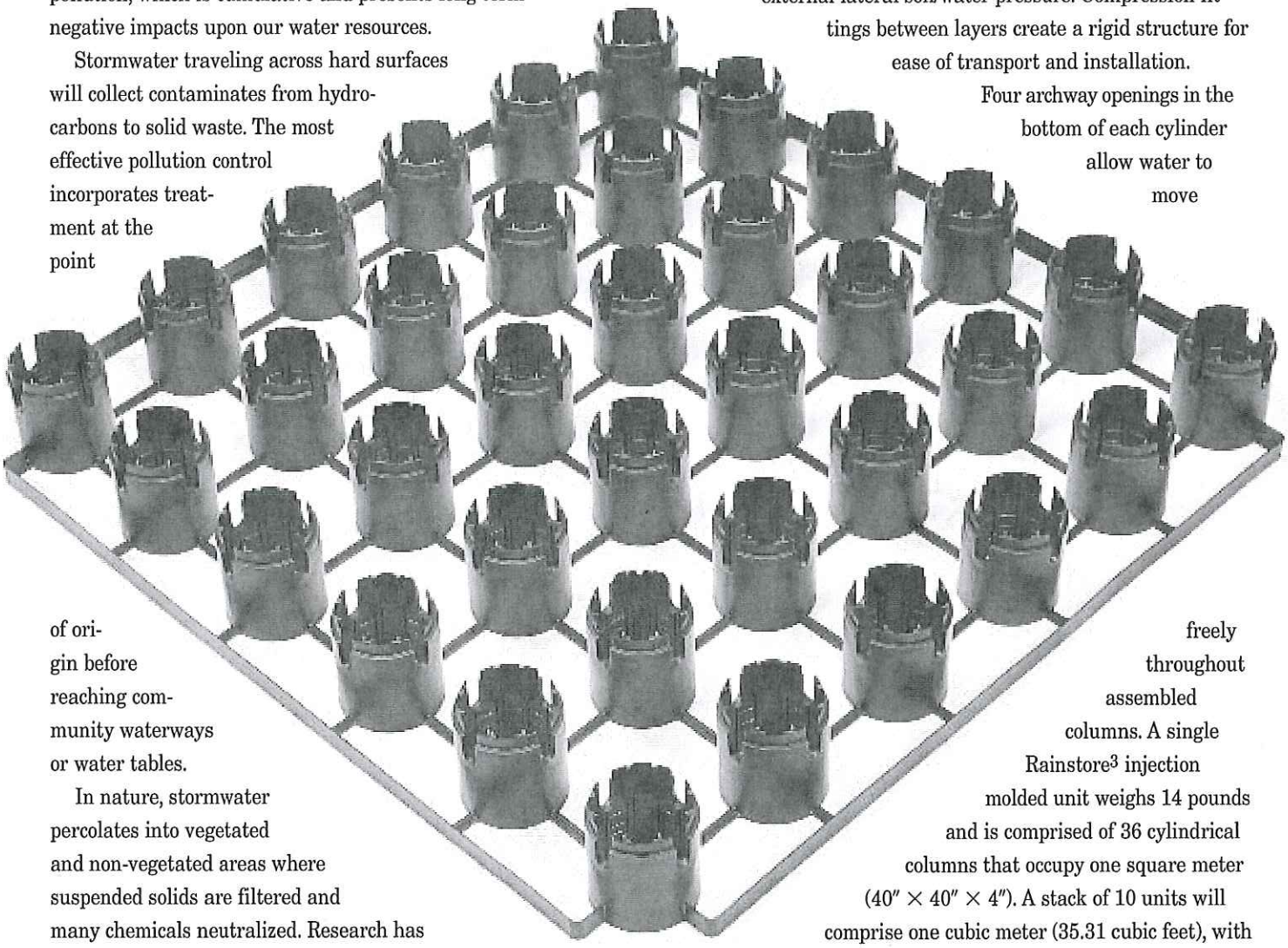
In nature, stormwater percolates into vegetated and non-vegetated areas where suspended solids are filtered and many chemicals neutralized. Research has shown that hydrocarbons are consumed by bio-organisms found in the root zone without killing the vegetation.

Invisible Structures' porous pavement and bio-swale products provide one of the most effective means of removing pollutants at the source. Refer to Sand-Bio Filter Inlet Detail for ways to reduce or eliminate catch basins and elaborate cleaning systems. Rainstore^3 in combination with ISI's other outstanding products provide a complete stormwater management package.

PRODUCT DESCRIPTION

Basic Structure

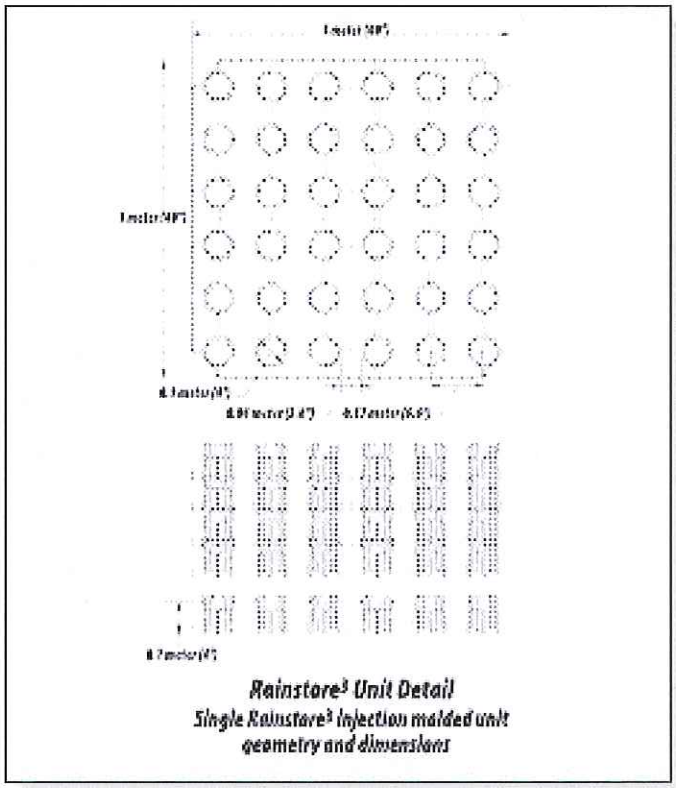
Rainstore^3 is a structure of thin-walled cylindrical columns injection molded of recycled resins of either high impact polypropylene (HIPP), or high density polyethylene (HDPE) plastic for strength, durability, and green industry benefit. For potable water storage, virgin plastic is used. Cylinders are 10 cm (4″) diameter, 5mm (0.2″) average wall thickness, 10 cm (4″) tall, and spaced 16.7 cm (4.6″) apart. T-shaped beams connect the cylinders and resist external lateral soil/water pressure. Compression fittings between layers create a rigid structure for ease of transport and installation. Four archway openings in the bottom of each cylinder allow water to move freely throughout assembled columns. A single Rainstore^3 injection molded unit weighs 14 pounds and is comprised of 36 cylindrical columns that occupy one square meter (40″ × 40″ × 4″). A stack of 10 units will comprise one cubic meter (35.31 cubic feet), with approximately 250 gallons of net water storage.



RS^3 allows for water containment depths from 10 cm to 2.5 meters (4″ to 94″ or 8.2′). The following standard depths are stocked: *in meters* (0.2, 0.3, 0.4, 0.6, 0.8, 1.2, and 2.4) *in feet* (0.7, 1.0, 1.3, 2.0, 2.6, 4.0, and 7.9). Custom depths are also available.

Side bumpers provide foolproof, accurate spacing. Structures may be moved by hand. A layer of geogrid, below the cells and above the existing subsoil, provides a stable surface and will insure proper alignment.

RS³ withstands repeated freeze-thaw cycles, will not rust, break down, crack, is not affected by chemicals, extremes of pH, oils, salts, or fertilizers. Ethylene plastics have a projected service life in excess of 100 years provided they are not exposed to UV light.



Rainstore³ Unit Detail
Single Rainstore³ injection molded unit geometry and dimensions

Overall System

RS³, wrapped with a geotextile filter fabric or geomembrane, and placed side by side in an excavated void create a variety of water storage structures. Inflow, outflow, visual inspection pipes, catch basins, pumps and water filters are installed as needed. Backfilling and compacting the sides, geogrid, base course, and surfacing complete the system.

STORMWATER MANAGEMENT APPLICATIONS

Land development significantly affects the natural course of stormwater. Prior to development, land is semi-porous enabling rainfall to directly infiltrate, which filters pollutants, recharges subsurface water tables, and reduces flooding. Sealing the earth's surface with parking lots, roads, walks, and roofs, results in rapid runoff to storm sewers and rivers, causing flooding and unacceptable pollution of valuable water resources.

To combat these serious problems, national (EPA) and regional regulatory agencies require all or a portion of stormwater to be managed on site.

Surface detention basins and ponds are common, but often occupy valuable real estate and create safety hazards, insects, weeds, and odor problems. Increasingly, the most economical and convenient solution is an "underground pond," where the water may be stored temporarily before it is released to a storm sewer (detention), stored until it exfiltrates (retention), or stored for reuse (harvesting).

Porous Paving

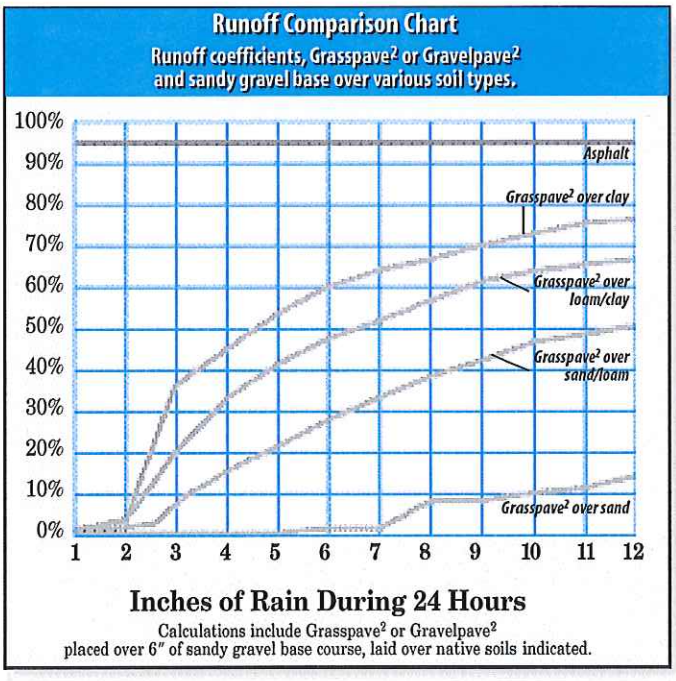
The most direct stormwater management technique is to allow the rain to penetrate the surface where it falls. This can be done with Grasspave² or Gravelpave² porous paving. The base course below these plastic reinforcement structures will typically store at least 2.5″ of rain, or more, if subsoils are porous. Firelanes and overflow parking areas are frequently used as infiltration basins.

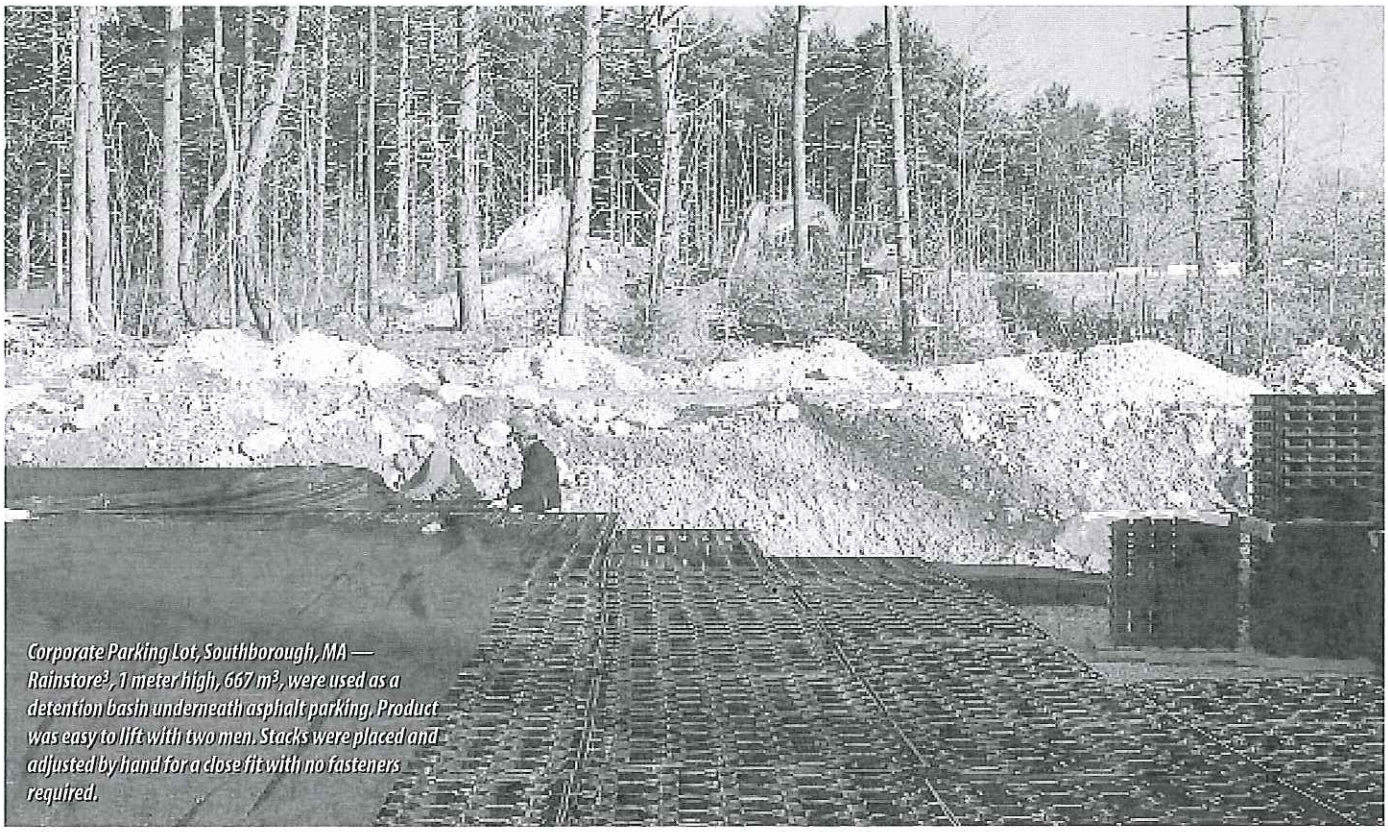
Rainstore³ Detention

Short term storage and releasing stormwater at a predetermined rate through the use of small outlet pipes or pumps is detention. Downstream stormwater facilities may exist but have a limited flow rate capacity. While the water is held awaiting gradual release, it may or may not be allowed to exfiltrate into the site soils. A porous non-woven geotextile is used to encase RS³. Geomembranes are used when exfiltration must be avoided.

Rainstore³ Retention

When downstream stormwater facilities do not exist or the amount of water released from a site is limited for some other reason, stormwater retention is utilized. Typically, there are no outflow pipes. RS³ is encased in non-woven geotextile and placed above porous soil. Replenishing existing aquifers is a benefit.





Corporate Parking Lot, Southborough, MA — Rainstore³, 1 meter high, 667 m³, were used as a detention basin underneath asphalt parking. Product was easy to lift with two men. Stacks were placed and adjusted by hand for a close fit with no fasteners required.

Water Harvesting

As population centers expand in arid climates, traditional water sources such as rivers and aquifers have been significantly depleted. With increased water prices, it becomes more economical to harvest rainfall with Rainstore³. Also, demands upon ground resources are reduced, making some water critical projects possible. The choice for long term storage with Rainstore³ is influenced by site opportunities and constraints, access to community infrastructure (water, sewer, fire protection), government regulations, and owner principles and guidelines.

Stormwater falling on a site is collected from roofs, bio-swales, and parking areas. A strong impermeable liner surrounding the

Product Performance Analysis

Performance Criteria	Rainstore³ 2.5 meter (8.2′) height	Arched Chambers (34″ × 75″ × 16″)	Corrugated Plastic Pipe (60″ dia.)	Corrugated Metal Pipe (72″ dia.)	Concrete Pipe (72″ dia.) Non-perforated
% of excavated volume available for water storage	~75%*	~40%*	~60%*	~53%*	~38%*
% of storage volume occupied by stone	0%	~59%	~60%	~70%	0%
Maximum water storage volume/ surface area	8.2 ft³ water storage/ft² surface area	~1.4 ft³ water storage/ft² surface area	3.8 ft³ water storage/ft² surface area	4.7 ft³ water storage/ft² surface area	3.2 ft³ water storage/ft² surface area
Chamber depth design flexibility	4″ min., 98″ max., in 4″ increments	12″ min., 30.5″ max.	12″ dia. min., 60″ dia. max., 6″ increments	12″ dia. min., 240″ dia. max., 6″ increments	12″ dia. min., 240″ dia. max., 6″ increments
Cover depth required	12″	18″	12″ – 30″ based on diameter	12″ – 24″ based on diameter	6″
On-site handling and manual installation	Easy	Easy	Difficult	Difficult	Difficult
Maintenance, inspection, clean-out	Moderate	Moderate	Easy	Easy	Easy
% of chamber surface area available for infiltration	100%	~75%, including side cuts	~15%, based on perforation area to pipe surface area	~15%, based on perforation area to pipe surface area	0%

*Calculations based on an average sized (10 meter × 10 meter) footprint installed per manufacturer's specifications.

Appendix G

Project Coordination

Date	Meeting Information
11/17/2010	Drainage Concepts Meeting at RS&H
01/12/2011	Bannerman Road CAC Meeting
01/20/2011	Bannerman Meeting at LCGEM
02/09/2011	Bannerman Road CAC Meeting
02/23/2011	Bannerman Meeting at LCPW
03/10/2011	Bannerman Meeting at LCPW
03/11/2011	Stormwater Exemptions Email from LCPW
04/06/2011	Bannerman Road CAC Meeting
04/26/2011	Bannerman Pre-Application Meeting LCPW
04/27/2011	Bannerman Alternatives Meeting at LCGEM
04/29/2011	Geotechnical Alternatives Meeting at RS&H
05/03/2011	Bannerman Pre-Application Meeting NWFWMD
05/19/2011	Bannerman Road Alternatives Public Meeting
06/07/2011	Bannerman Road CAC Meeting
06/08/2011	StormTech Lunch and Learn Seminar
06/22/2011	Meeting with LCGEM
09/14/2011	Meeting with LCPW – LCPW PE Report Comments
02/27/2012	Meeting with LCGEM –Killearn Acres Green Area Agreement
05/03/2012	Bannerman Road Open House on Preferred Alternate

From: Charles Wu [mailto:WuC@leoncountyfl.gov]
Sent: Friday, March 11, 2011 1:30 PM
To: John Kraynak
Cc: Shinming George Su; Roark, Drew; Arnio, Nicholi
Subject: Stormwater Questions for Bannerman Road Corridor Study

John:

Based on today's discussion on the stormwater requirements for the Bannerman Road Corridor Study, your answers to the questions by the Bannerman Road Corridor Study Team are summarized as follows.

1. When the Kerry Forest Parkway extension was built, a dual 4-foot sidewalk parallel to each other with a two-foot grass strip was installed. If the same concept is applied to Bannerman Road between Meridian Road and Tekesta Drive, may we build two five-foot sidewalks parallel to each other with a grass area to separate them and on one side of the road? With this design, the underdrain with gravels or sand to provide the treatment volume of 1.125 inches will be included under the sidewalk.

Answer: For Segment 1 between Meridian Road and Bull Headley Road, no matter it is dual sidewalks on one side or one sidewalk on each side of the road, the 1.125 inches of the treatment will be required. For Segment 2 from Bull Headley Road to Tekesta, four inches of treatment volume will be required in the BSA for either scenario.

2. If a two-foot shoulder is provided on each side of the Bannerman Road between Meridian Road and Tekesta Drive, what will be the stormwater requirements?

Answer: For Segment 1 between Meridian Road and Bull Headley Road, the treatment of 1.125 inches will be required. The Segment 2 from Bull Headley road to Tekesta Road will have to meet the four-inch BSA water quality treatment requirement.

3. If curbs and gutters are used with six-foot sidewalks directly behind the curbs on Bannerman Road between Meridian Road and Tekesta Drive, can we still use the underdrain to treat the 1.125 inches of the runoff? Will the 18 inches of the curb and gutter area be included with the six foot sidewalk for treatment volume calculations?

Answer: From Meridian Road to Bull Headley Road, 1.125 inches of the treatment volume will be provided for the six-foot sidewalk but the 18 inches of the curb and gutter can be excluded where there is no known localized flooding issue. From Bull Headley Road to Tekesta Drive, the four-inch BSA standard will be applied to the sidewalk but the 18 inches of curb and gutter can be excluded from treatment requirements.

4. If a 10-foot Shared Use path with porous/pervious pavement is used for the entire Bannerman Road Corridor, can this element receive water quality treatment exemption?

Answer:

For the segments inside BSA, this project will comply with Section 10-4.382(c) of the Leon County Code as listed in the following.

Sec. 10-4.382. - Stormwater treatment standards within the Bradfordville study area.

Stormwater runoff from new development in the Bradfordville study area shall meet the standards set forth in this section in addition to other standards within Article IV.

(a)

Stormwater runoff shall be treated to one of the following standards below:

(1)

Systems utilizing on-line dry retention only. A volume of runoff calculated as four inches times the total impervious area that will be situated on the site shall be retained on the site or in an approved master stormwater facility. This calculation can exclude the wetted area of the pond/stormwater facility. This volume of runoff shall be collected from the entire developed portion of the site and directed to on-line dry retention storage. Retention can occur in cisterns, ponds, shallow swales, landscaped areas, or natural areas.

(2)

Systems utilizing a combination of off-line dry retention and detention:

a.

Off-line retention shall be provided with a treatment volume calculated as two and one-half inches times the total impervious area on the site.

b.

Detention portion of system—In addition to the dry retention volume, one of the following detention options shall also be provided:

1.

Dry detention systems will provide a treatment volume calculated as two inches times the total impervious area on the site, or

2.

Wet detention system with a permanent pool volume equivalent to two and nine-tenths inches times the impervious area on-site.

c.

The calculation of the above volumes can exclude the wetted area of the stormwater facility.

d.

Runoff from the entire developed portion of the site shall be directed in sequence to each of the above facilities.

(b)

Drawdown requirements:

(1)

For on-line dry retention (subsection (a)(1) above), the entire treatment volume must recover within 72 hours.

(2)

For off-line dry retention (subsection (a)(2)a. above), the entire treatment volume must recover within 24 hours.

(3)

For dry detention systems (subsection (a)(2)b.1. above), the treatment volume must recover within 72 hours. Dry detention systems will not include underdrains but will utilize an orifice or V-notch weir for drawdown. The bottom of the drawdown device will be a minimum of six inches above the pond bottom.

(4)

For wet detention systems (subsection (a)(2)b.2. above), the bottom of the weir crest will be a minimum of 12 inches above the normal water level (seasonal high groundwater table elevation).

(5)

Regardless of the method of volume recovery, the entire retention volume must recover within the time frame established above unless an approved continuous analysis, using Tallahassee Airport rainfall data from January 1, 1959 to December 31, 1998, demonstrates that the total volume retained within the stormwater system over the 40-year period is greater than or equal to that retained by a dry retention system as set forth in subsection (1) based on the above described recovery times. For systems requiring a combination of retention and detention, this analysis shall only be used for the retention portion of the system. The detention portion of this combination system will still be required in full pursuant to subsection (a)(2)b.

(c)

For calculating the treatment volume required for pervious pavements and graveled areas, initially such surfaces shall be assumed to be 100 percent impervious, then deductions in the required treatment volume for such areas can be taken that is equivalent to:

(1)

The porosity of the pavement material times the thickness of the paving material times a safety factor of five-tenths.

(2)

If, and only if, the soils immediately underlying the pavement for a depth of 18 inches have a permeability of three inches per hour or greater, as demonstrated by on-site percolation tests, then a further deduction can be taken equivalent to the porosity of the soil strata times four inches times a safety factor of five-tenths.

The above deductions will be allowed provided that the applicant specifically commits, in his stormwater operating permit, to regularly sweep/vacuum the area covered with pervious pavement and to verify the pavement's percolation capacity when the operating permit is renewed.

The porous pavement itself should be sufficient to address the requirements in Lake Jackson basin without additional stormwater quality or volume control measure.

Please let me know if my understanding of your response to these questions is correct or you may provide further clarifications.

Sincerely,

Charles

Northwest Florida Water Management District

Bureau of Environmental Resource Regulation

Meeting Sign-In Sheet

DATE: TUESDAY, MAY 03, 2011
Time:

Meeting Type: PRE-AP **Meeting Location:** DELANY

Project Name: BANNERMAN RD **Project Location:** SAM E

Name	Title	Company	Phone	Fax	E-Mail
LEE MARCHMAN	BUREAU CHIEF	NWFWMD	921-5814		LEE.MARCHMAN@NWFWMD.STATE.FL.US
Craig [illegible]	Associate Env. Sci.	"	921-5856		
CHARLES LU	CHIEF OF ENG Design.	LCPW.	606-1546		LUC@LEONCOUNTYFL.GOV.
George Su	Sr. Design Engr.	"	606-1544	606-1501	sushin@leoncountyfl.gov
Lauren Boes	Design Engineer	LPA Group	205-0460		ljboes@lpagroup.com
Nick Arnio	Project Manager	RS&H	558-2813		nicholi.arnio@rsandh.com
DREW ROARK	Project Director	RS&H	558-2821		drew.roark@rsandh.com
Ed Ringe	Senior Stormwater	LPA	205-0460		eringe@lpagroup.com

Review Comments to Bannerman Road PD&E
Draft Drainage Report (June 2011)

Review Comments on the draft report (w/o attachments)

1. **Proposed Conditions:** For each studied alternative, additional ROW required to the north and south of existing ROW should be provided. This can be in a range if the existing ROW width is inconsistent.

2. **Pervious Pavement:** If the pervious pavement is not used in the studied alternatives, then this section should make it clear that the pervious pavement is not considered at the end of this section.

3. **Stormwater Exemptions:** The following statement "The Leon County exemptions are not applicable for the multi-use path and the sidewalks that are proposed for Segments 1 & 2 based on the following information." is a little confusing because it make readers think that no alternatives are available to install multi-use path and sidewalks without put in stormwater ponds.

4. **Bradfordville Study Area Continuous Analysis Retention:** It is very unusual to design a stormwater pond (SWMF) with vertical walls, so I would prefer use 4:1 side slope to size the SWMF to avoid unnecessary doubts or questions.

5. **Design Results & Potential SWMF Sites:** Basin 1: Apparently there is no solution yet for Basin 1, but the study needs to develop a viable solution even though it may be expensive. Therefore, more geotechnical exploration tests should be done to confirm the possible option at parcel west of Greystone subdivision. We cannot leave this undetermined at the end of study.

6. **Basin 3:** Is it a typo for 168+00 (PB-8)?

7. **Summary: Segment 3:** Again, a solution needs to be developed for Basin 1.

Meeting Minutes – Ed Ringe, LPA

Project – Bannerman Road PD&E Study Meridian Rd. to Thomasville Road

Meeting February 27, 2012

Place – Leon County Growth & Environmental Management Conference Rm.

Attendees:

John Krayank, LCGEM
Nawfal Ezzagaghi, LCGEM
Charles Wu, LCPW
George Su, LCPW
Nick Arnio, RS&H
JoAnne Todd, LPA
Ed Ringe, LPA

Meeting Focus: Killearn Lakes HOA Green Space Area and Permitting/Stormwater Issues

Discussion:

- John had researched the KLHOA green space area located north of the roadway between Bannerman Road and the KL lots for stormwater issues. The green space did not have any specific stormwater function other than to maintain the pre-existing sheet flow from and to the development, which was the basic concept of the Killearn Lakes development approach.
- John said that he is authorized to permit up to two (2) acres of wetland impact with appropriate mitigation. He felt that there was less than 2 acres of impact. In the event that there was more than 2 acres of impact, the project should qualify for a Public Sector Infrastructure variance.
- Charles said the PD&E document would need to consider the wetland impact including the NWFWMD in addition to Leon Co. A meeting would need to be set up with WMD to discuss the project impacts and result included in the document.
- John indicated that the permit would be conditioned on concurrence of the KLHOA.
- Charles indicated that there were two ongoing drainage projects that the County had under design which would require a modification to the present HOA green space requirements and that the utilization of the green space for the trail and other future activities would be incorporated into the modification of the present agreement if possible.
- John asked about which utility had the powerline easement and that this would need to be addressed in the permit application. Charles indicated it was Talquin Electric. Nick said that Talquin indicated they have an easement but had been unable to provide a copy and that it had not been found in the public records.

Follow-up: (Post Meeting) Nick will follow-up with RS&H wetlands specialist. There had been a meeting with NWFWMD and he would review outcome and determine any further action required.

Appendix H

Cost Estimates

Total Stormwater Management and Roadway Drainage Cost

	Item	Quantity	Unit Cost	Cost	Reference
Segment 1					
	Underground Retention	7122	$ 50.93	$ 362,694	Sheet 2
	Cross-drain Extension Under Trail	9		$ 44,358	Sheet 4
	Sidedrain	38	$ 2,500.00	$ 95,000	Sheet 5
			Segment 1 Total	**$ 502,052**	
Segment 2					
	Underground Retention	5425	$ 50.93	$ 276,273	Sheet 2
	Cross-drain Extension Under Trail	3		$ 13,884	Sheet 4
	Sidedrain	5	$ 2,500.00	**$ 12,500**	Sheet 5
			Segment 2 Total	**$ 302,657**	
Segment 3					
	Underground Retention	4819	$ 504.39	$ 2,430,488	Sheet 3
	SWMF Basin 3-1 & Storm Drain	1	$ 501,146.80	$ 501,147	Sheet 6
	Basin 3-8 Storm Drain Cost	1	$ 11,072.00	$ 11,072.00	Sheet 5
	Cross-drain Replacement	3		$ 35,416	Sheet 4
	Sidedrain	6	$ 2,500.00	$ 15,000	Sheet 5
			Segment 3 Total	**$ 2,993,123**	
			Corridor Total	**$ 3,797,833**	

SEGMENT 1 & 2 UNDERGROUND AGGREGATE RETENTION

EXCLUDES R/W COST

						Length					
Segment	Item	Beg. Sta.	End Sta.	Distance	Driveways	SD Pipe & MES	Exception	Storage	Unit	Cost/ft	Cost
1	Underground Storage	10+02	97+20	8718	38	42	1596	7122	LF	$ 50.93	$ 362,694
2	Underground Storage	97+50	153+85	5635	5	42	210	5425	LF	$ 50.93	$ 276,273

Segment 1 & 2 Underground Storage Per Foot Cost Estimate

Quantity	Item Description	Units	Width	Height	Length	Unit per ft	Unit Cost	Cost/Foot
0.9	Fine Aggregate (Silica Sand)	CY	10	2.5	1	0.93	$ 30.00	$ 27.78
0.2	Coarse Aggregate (Gravel)	CY	2	2.5	1	0.19	$ 65.00	$ 12.04
2.2	Geotextile Fabric	SY	12	5	1	2.22	$ 2.00	$ 4.44
1.1	Excavation	CY	12	2.5	1	1.11	$ 6.00	$ 6.67
							Total Cost/Ft	**$ 50.93**

SEGMENT 3 SWALE RETENTION COST ESTIMATE

EXCLUDES R/W COST

10' TREATMENT LINEAR SWMF - BOTH WESTBOUND AND EASTBOUND (LSWMF)

WITH UNDERGROUND STORAGE/RECOVERY UNDER 10' TRAIL

(Cost is based on a per foot cost for an assumed 840' watershed section)

Group	Quanity	Item Description	Units	Unit Cost	Cost	Comment
Collection and Overflow to Offsite Existing Outfall						
	2	Ditch Inlet w/skimmer; Type C < 10'	EA	$ 3,000.00	$ 6,000.00	
	2	Mitered End Section; 24" Cross-drain	EA	$ 1,200.00	$ 2,400.00	
	130	24" Storm Drain Pipe	LF	$ 51.00	$ 6,630.00	Pipe from EB treatment LSWMF to WB LSWMF
			Subtotal		$ 15,030.00	
			Cost per foot for Offsite System		**$ 17.89**	

WB & EB Roadway LSWMF Underground Treatment - 250' cells;								Width	Height	Length	per Ft
	204	Prepared Soil Layer 12" (Engineered Soil)	SY	$ 3.00	$ 613.33	Quantity= 204	Eng. Soil =	24	1	1	0.9
	554	Fine Aggregate (Silica Sand)	CY	$ 30.00	$ 16,611.11	Quantity= 554	Sand =	26	2.5	1	2.4
	613	Geosynthetic Reinforcement (Geogrid)	SY	$ 7.50	$ 4,600.00	Quantity= 613	Geogrid =	24	NA	1	2.7
	1406	Geotextile Fabric	SY	$ 2.00	$ 2,811.11	Quantity= 1406	Fabric =	55	NA	1	6.1
	1278	Excavation	CY	$ 6.00	$ 7,666.67	Quantity= 1278	Excav. =	30	5	1	5.6
	67	Ditch spillways (4" Ditch Pvm't)	SY	$ 75.00	$ 5,000.00	Quantity= 67	4" Ditch Pvmt =	15	NA	20	33.3
			Total		$ 37,302.22						
			Cost per Foot each roadway		$ 149.21						
			Both WB & EB LSWMF		$ 298.42						

Westbound Roadway Underground Storage Units - 250' cells;								Width	Height	Length	per Ft
	1104	Rainstore3 units	EA	$ 36.00	$ 39,744.00	Quantity= 1104	"Rainstore 3" Units =	2	8	0.3	4.8
	204	Fine Aggregate (Silica Sand)	CY	$ 30.00	$ 6,133.33	Quantity= 204	Sand =	12	2	1	0.9
	43	Coarse Aggregate (Gravel)	CY	$ 65.00	$ 2,768.52	Quantity= 43	Gravel =	10	0.5	1	0.2
	434	Geosynthetic Reinforcement (Geogrid)	SY	$ 7.50	$ 3,258.33	Quantity= 434	Geogrid =	17	NA	1	1.9
	639	Geotextile Fabric	SY	$ 2.00	$ 1,277.78	Quantity= 639	Fabric =	25	NA	1	2.8
	1406	Excavation	CY	$ 6.00	$ 8,433.33	Quantity= 1406	Excav. =	30	5.5	1	6.1
			Total		$ 61,615.30						
			Cost per Foot - Undersgound Cell Storage - Westbound Rdwy Only		**$ 246.46**						

		Cost per Foot	Length	Cost
Total Cost per foot of 840' watershed =	Outlet Pipe =	$ 17.89	840	$ 15,030.00
	Both LSWMF =	$ 298.42	750	$ 223,813.33
	Underground Storage Units =	$ 246.46	750	$ 184,845.89
	Total Cost of 840' watershed =			$ 423,689.22
	TOTAL COST OF UNDERGROUND RETENTION per foot			**$ 504.39**

Cost of underground storage units =	21.05
Shipping =	4.90
Installation =	5.00
15% Profit =	4.64
Total	35.59
Use for estimate	$36.00

Segment	Underground Storage	Begin Sta.	End Sta.	Distance	# of SD @ 42'	Length	# of SS @ 70'	Length	Net Storage Length	Usable Storage Length = 85%
3	Length Suitable For Storage	162+40	227+07	6467	9	378	6	420	5669	4818.65

Cross-Drain Pipe Cost

Assumptions:

1. All existing pipe require replacement under trail or new roadway construction
2. All existing pipes replaced in size (24" minimum) with RCP
3. Concrete headwalls will be provided.
4. Headwalls will be placed 5' from the proposed R/W at roadway cross-drains, 4' from edge of sidewalk or trail
5. Cost Estimate uses FDOT Master Pay Item List LRE Dated 3-6-12

Segment 1		Size (Dia. - inches)		SW/Trail Length	Cost	Headwalls Number	Cost	Roadway Length	Cost	Headwalls Number	Cost	Total Cost
ID #	Station	Existing	Proposed									
15	20+40	18" RCP	24" RCP	16	$ 816	2	$ 3,046					$ 3,862
24	33+70	18" RCP	24" RCP	16	$ 816	2	$ 3,046					$ 3,862
37	50+80	30" RCP	30" RCP	16	$ 1,056	2	$ 4,460					$ 5,516
54	84+60	2-30" RCP	2-30" RCP	16	$ 2,112	2	$ 5,616					$ 7,728
14	19+50	24" RCP	24" RCP	32	$ 1,632	2	$ 3,046					$ 4,678
23	33+25	15"CMP	24" RCP	32	$ 1,632	2	$ 3,046					$ 4,678
34	43+60	24"CMP	24" RCP	32	$ 1,632	2	$ 3,046					$ 4,678
36	48+20	18" CMP	24" RCP	32	$ 1,632	2	$ 3,046					$ 4,678
40	53+40	18" CMP	24" RCP	32	$ 1,632	2	$ 3,046					$ 4,678
											Segment 1 Total	$ 44,358
Segment 2												
75	177+00	30" x 19"ERCP	30" x 19"ERCP	16	$ 992	2	$ 2,570					$ 3,562
86	130+20	38" x 24"ERCP	38" x 24"ERCP	16	$ 1,216	2	$ 3,590					$ 4,806
91	149+40	30" CMP	30" RCP	16	$ 1,056	2	$ 4,460					$ 5,516
											Segment 2 Total	$ 13,884
Segment 3												
99	166+55	18" CMP	24" RCP					148	$ 7,548	2	$ 3,046	$ 10,594
101	178+45	30" CMP	30" RCP					148	$ 9,768	2	$ 4,460	$ 14,228
108	194+15	18" CMP	24" RCP					148	$ 7,548	2	$ 3,046	$ 10,594
											Segment 3 Total	$ 35,416

Costs

Pipe Size	Cost/Ft	Conc Headwall CY	Cost each
24"	$ 51.00	2.24	$ 1,523
30"	$ 66.00	3.28	$ 2,230
2-30" RCP	$ 132.00	4.13	$ 2,808
30" x 19"ERCP	$ 62.00	1.89	$ 1,285
38" x 24"ERCP	$ 76.00	2.64	$ 1,795

Concrete Class I Endwalls @ $ 680.00

Storm Drain Cost

Basin 3-8

Assumptions:

1. All existing pipe can be incorporated into the system and modified by extending
2. Minimum pipe sizes are those used by FDOT since this is a FDOT system.
3. The preliminary review indicated the design anticipated the 4-lane drainage area and coefficients.
4. Cost Estimate uses FDOT Master Pay Item List LRE Dated 3-6-12

		Structure		Pipe					
Station	Side	Type	Cost	Size	Length	Cost/Ft	Cost	Total Cost	Remarks
229+25	28' Rt	P-5 Inlet	$ 3,250.00	18"	8	$ 42.00	$ 336.00	$ 3,586.00	New Curb Inlet
229+25	22' Rt	P-7 Partial	$ 1,950.00					$ 1,950.00	Convert Existing P-1 Curb Inlet to P-7 MH
229+25	28' Lt	P-5 Inlet	$ 3,250.00	18"	8	$ 42.00	$ 336.00	$ 3,586.00	
229+25	22' Lt	P-7 Partial	$ 1,950.00					$ 1,950.00	
							Total	$ 11,072.00	

Side-Drain Cost

Assumptions:

1. All existing pipe require replacement under trail or new roadway construction
2. All existing pipes replaced in size (24" minimum) with CMP
3. Mitered End Section headwalls will be provided.
4. Cost based on the existing number of driveways
5. Cost Estimate uses FDOT Master Pay Item List LRE Dated 3-6-12
6. Basis of Cost = 16' - 24" CMP & 2 - 24" 1:4 CMP MES

Cost (each) = 16 x $ 51 + 2 x $ 842 = $ 2500

Segment	Number	Cost Each	Total
1	38	$ 2,500.00	$ 95,000.00
2	5	$ 2,500.00	$ 12,500.00
3	6	$ 2,500.00	$ 15,000.00

StormwaterManagement Facility Cost Estimate
Including Storm Drain System
EXCLUDES R/W COST
Basin 3-1

Alternate	Group	Quantity	Item Description	Units	Unit Cost	Cost	Comment
Corridor Study	Basin 3-1 SWMF and Storm Drain Pipe						
		4.64	Clearing & Grubbing	Ac	$20,000.00	$92,800.00	Total Pond Site
		14084	Excavation	CY	$3.50	$49,294.00	Volume Req'd./ (8.73ac-ft x 43560/27)
		4.64	Grading	Ac	$15,000.00	$69,600.00	Total Pond Site
		22458	Sod	SY	$3.00	$67,374.00	Total Pond Site
		1908	Fencing	LF	$15.00	$28,620.00	Site perimeter; vinyl coated w/I gate
		1	Outlet Structure	EA	$6,000.00	$6,000.00	Emergency spillway
		1900	24" Storm Drain Outfall Pipe	LF	$51.00	$96,900.00	750' Outfall to SWMF; 1150' Offsite Bypss system
		5	Type P Manhole < 10'	EA	$2,800.00	$14,000.00	3 on Outfall to SWMF; 2 on Offsite system
		2	Ditch Inlet Type E < 10'	EA	$3,500.00	$7,000.00	Ditch Collectors @ Tekesta
		4	Modified "C" Under sidewalk Inlets	EA	$6,000.00	$24,000.00	Offsite system includes handrail
					Subtotal	$455,588.00	
					Contingency @ 10%	$45,558.80	
			Total Stormwater Management and Roadway Drainage Cost			**$501,146.80**	

Appendix B

Phase 1 Roadway Soil Survey

PHASE I
ROADWAY SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

Prepared For:

REYNOLDS, SMITH, AND HILLS, INC.
1701 HERMITAGE BOULEVARD
SUITE 101
TALLAHASSEE, FLORIDA 32308

Prepared By:

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.
3154 ELIZA ROAD
TALLAHASSEE, FLORIDA 32308
(850) 386-1253

October 2010
23-59-10-02

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

October 27, 2010

EGS File Number: 23-59-10-02

Reynolds, Smith, and Hills, Inc.
1701 Hermitage Blvd.
Suite 101
Tallahassee, FL 32308

ATTN: Nicholi Arnio, P.E.
Project Manager

SUBJECT: **Phase I Roadway Soil Survey**
Bannerman Road Corridor Study
Bannerman Road
Leon County, Florida

Dear Nicholi:

Attached is a Copy of the Phase I Roadway Soil Survey Report for the above referenced project. Presented in this Preliminary Report is a summary of the subsurface materials encountered, field and laboratory test results, measured groundwater, estimated "normal" seasonal high groundwater values, and subsurface conditions.

Environmental and Geotechnical Specialists, Inc. (**EGS**) appreciates the opportunity to be of service on this project. If you have any questions concerning the enclosed Report, please do not hesitate to call Tom or myself at (850) 386-1253.

Very truly yours,

Environmental and Geotechnical Specialists, Inc.
Certificate of Engineering Authorization Number: 6222

10-27-10

Myron L. Hayden, Ph.D., P.E.
Senior Geotechnical Engineer
FL P.E. No. 34067

10-27-10

Matthew R. Landschoot, E.I
Geotechnical Engineer I

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APPENDIX B	SOIL CLASSIFICATION DATA
APPENDIX C	USDA SOIL SURVEY

1.0 INTRODUCTION

Environmental and Geotechnical Specialists, Inc. (**EGS**) has completed the Phase I Roadway Soil Survey, as authorized by **Reynolds, Smith, and Hills, Inc.**, for the proposed reconstruction of Bannerman Road. This Report includes a summary of the preliminary geotechnical investigation conducted for this project, an evaluation of field and laboratory test data, preparation of the soil boring logs and soil classification data sheets, and both measured and estimated "normal" seasonal high groundwater results.

2.0 SITE LOCATION AND CONDITIONS

It is the understanding of **EGS** that this project is to consist of the widening of Bannerman Road from Meridian Road to the intersection at Thomasville Road. A Site Location Map has been provided as **Figure 1**.

The general topography of the project area is shown in the United States Geological Survey (**USGS**) Topographic Map, which has been included as **Figure 2**. As can be seen in **Figure 2**, the project area is moderately hilly and primarily drains to the southwest towards Holley Pond. The ground surface elevation of the Project appears to vary from around EL 160 feet to EL 240 feet.

3.0 SUBSURFACE INVESTIGATION

The subsurface investigation outlined in this Phase I Roadway Soil Survey was conducted in October 2010 under the supervision of Thomas H. Hayden, P.E, with Matthew R. Landschoot, E.I. serving as the Field Engineer, and Myron L. Hayden, P.E. serving as the Senior Geotechnical Engineer. The soil boring locations outlined in this Report were determined based on the variations in soil types that were reported in the United States Department of Agriculture's (**USDA**) Soil Survey of Leon County.

EGS installed Soil Boring's **BR-1** through **BR-24** using a Hand Auger coupled with a Static Cone Penetrometer Index (**CPI**) test conducted on two and one-half (2 ½) feet intervals. The Cone Penetration Index (**CPI**) test results presented in this Report have been converted to equivalent standard penetration test (**SPT**) "**N**" values using the correlation of **SPT** "**N**" = **CPI** "**C**"/4.

Representative soil samples were collected on one (1) foot intervals in each soil boring. The soil samples were classified in the field by **EGS** personnel and then sealed and transported to **EGS**'s laboratory for additional testing.

The laboratory tests performed included water contents, grain-size distribution, and Atterberg limits. The soil samples were classified in respect to the Unified Soil Classification (**UNIFIED**) system and the American Association of State Highway and Transportation Officials (**AASHTO**) soil classification system. The Boring Location and Groundwater Data for each boring have been provided in **TABLE 1**.

4.0 SUBSURFACE CONDITIONS

4.1 Soils

As can be seen in the Soil Boring Logs provided in **APPENDIX A**, the surficial soil layers encountered throughout the project consist primarily of a combination of silty fine sand (**A-2-4/STRATUM 1**) and clayey fine sand (**A-2-6/STRATA 2**).

In addition to the surficial layers of silty fine sand and clayey fine sand, clayey sand (**A-6/STRATUM 3)** and sandy clays (**A-7-6/STRATUM 4**) were encountered.

A copy of the Report of Tests has been provided in **TABLE 2**. Detailed Soil Boring Logs for this investigation have been provided in **APPENDIX A**, with the Soil Data Classification Data Sheets provided in **APPENDIX B**. Soil Boring Location Maps have been provided as **Figures 3A** through **3E** with the Soil Survey provided in **Figure 4A** through **4B**.

4.2 Groundwater Conditions

EGS did not encounter the permanent groundwater table for this study. Based on material types encountered and a review of the **USGS** topographic data, **EGS** believes that "perched" groundwater will exist in some areas within three (3) feet of the existing ground surface.

It should be noted that the following intersections are known to have "perched" groundwater within three (3) feet of the roadway surface; therefore, underdrains have been added at these intersections:

- Bannerman Road and Meridian Road
- Bannerman Road and Bull Headley Road
- Bannerman Road and Tekesta Drive

To facilitate use of the groundwater data, **TABLE 1** has been provided which contains a summary of the depths to groundwater "measured" after a period of 24-hours, and the estimated depths to "normal" seasonal high groundwater. As can be seen in this **TABLE**, **EGS** did not encounter groundwater in any of the soil borings installed for this study. It should be noted that elevations were not available at the time of this Report

4.3 USDA Soil Survey

As part of this investigation, **EGS** reviewed the United States Department of Agriculture's (**USDA**) Soil Survey of Leon County. The soils reported in the **USDA** Soil Survey consist of **Dothan Fine Sand**, **Orangeburg Fine Sand**, **Pelham Fine Sand**, **Plummer Fine Sand**, and **Yonges Fine Sandy Loam**, which are relatively consistent with the soils encountered during the field investigation. It should be noted, however, that the **USDA** Soil Survey is used as an approximation of likely soils within the project area. Slight variations in soil properties will occur when comparing data from the **USDA** Soil Survey and data obtained in the field.

To correlate the properties summarized in the **USDA** Soil Survey, **EGS** has provided **TABLE 3**, which includes the soil boring numbers, **USDA** material identifications, **USDA** material descriptions, reported soil classification, and reported depth to seasonal high groundwater. Copies of selected **TABLES** from the **USDA** Soil Survey and **Figures C-1** through **C-2** have been provided in **APPENDIX C**.

4.4 Karst Considerations

A review of the Leon County/City of Tallahassee GIS Database indicated that **there is an area where karst conditions may exist below the corridor**. This location is in the area of Bannerman Road and Lanternlight Road. If a karst feature exists at the location, its horizontal extent is likely limited. The locations of the likely karst features along the area of the corridor are shown in **Figure 5**.

5.0 RECOMMENDATIONS

Based on a review of the soils encountered for this Phase I Roadway Soil Survey, **EGS recommends** the following should be considered during the roadway design process:

- Deep cuts should be avoided where possible to reduce encountering unsuitable plastic material that will need to be overexcavated;
- A karst condition may exist in the area of Bannerman Road and Laternlight Road that could impact the long-term performance of the roadway;
- Although **EGS did not encounter** any groundwater in the soil borings installed for this study, perched groundwater should be anticipated within three (3) feet of the existing ground surface at some locations during and after periods of heavy rains.

6.0 CLOSURE

The data and results presented in this Phase I Roadway Soil Survey are intended for the use of **Reynolds, Smith, and Hills, Inc**. and **Leon County's Department of Public Works** for the preliminary evaluation of the proposed Bannerman Road improvements. This Report is preliminary and not intended for Final Design or any other use and will likely not be applicable. The data and recommendations presented in this Report are based on the borings made at the specific locations and depths noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, **Environmental and Geotechnical Specialists, Inc.** requests the opportunity to review the data and make any modifications to the design recommendations which may be appropriate.

7.0 SIGNATURES

Environmental and Geotechnical Specialists, Inc.
Florida Certificate of Engineering Authorization No. 6222

10-27-10

Myron L. Hayden, P.E., PhD.
Senior Geotechnical Engineer
FL P.E. Number 34067

10-27-10

Matthew R. Landschoot, E.I.
Staff Engineer

TABLES

TABLE 1
SOIL BORING LOCATION AND GROUNDWATER DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	DISTANCE FROM MERIDIAN ROAD (MILE)	OFFSET FROM EXISTING EDGE OF PAVEMENT (FEET)		MEASURED GROUNDWATER [2] DEPTH (FEET)	ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER DEPTH (FEET)	STATE PLANE COORDINATES NORTHING	STATE PLANE COORDINATES EASTING	GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [3] LATITUDE DEG(°)	LATITUDE MIN (')	LONGITUDE DEG(°)	LONGITUDE MIN (')
SOIL BORING LOCATIONS												
BR-1	5.5	4.40	6.0	LT	> 5.5	3.0 [4]	567923	2057252	30	33.678	84	13.082
BR-2	5.5	4.11	6.0	RT	> 5.5	4.0 [4]	569186	2056371	30	33.888	84	13.249
BR-3	5.5	3.89	6.0	LT	> 5.5	4.0 [4]	570042	2055636	30	34.029	84	13.391
BR-4	5.5	3.82	6.0	RT	> 5.5	> 5.5	570360	2055429	30	34.082	84	13.428
BR-5	5.5	3.54	6.0	LT	> 5.5	4.0 [4]	571452	2054452	30	34.263	84	13.618
BR-6	5.5	3.29	6.0	RT	> 5.5	4.0 [4]	572443	2053538	30	34.425	84	13.786
BR-7	5.5	3.17	6.0	LT	> 5.5	4.0 [4]	572855	2053093	30	34.494	84	13.873
BR-8	5.5	3.06	6.0	RT	> 5.5	3.0 [4]	573297	2052711	30	34.568	84	13.946
BR-9	5.5	2.92	6.0	LT	> 5.5	3.0 [4]	573768	2052135	30	34.644	84	14.056
BR-10	5.5	2.76	6.0	RT	> 5.5	3.0 [4]	574223	2051418	30	34.720	84	14.020
BR-11	5.5	2.63	6.0	LT	> 5.5	4.0 [4]	574531	2050779	30	34.771	84	14.313
BR-12	5.5	2.49	6.0	RT	> 5.5	4.0 [4]	574988	2050186	30	34.847	84	14.425

NOTES: 1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. BASED OFF 24 HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
3. DETERMINED WITH A TRIMBLE GEOEXPLORER XH GPS.
4. EXISTS IN A "PERCHED" STATE.

TABLE 1 (CONT.)
SOIL BORING LOCATION AND GROUNDWATER DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	DISTANCE FROM MERIDIAN ROAD (MILE)	OFFSET FROM EXISTING EDGE OF PAVEMENT (FEET)		MEASURED GROUNDWATER [2] DEPTH (FEET)	ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER DEPTH (FEET)	STATE PLANE COORDINATES NORTHING	STATE PLANE COORDINATES EASTING	GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [3] LATITUDE DEG(°)	LATITUDE MIN (')	LONGITUDE DEG(°)	LONGITUDE MIN (')
SOIL BORING LOCATIONS												
BR-13	5.5	2.26	6.0	LT	> 5.5	5.0 [4]	575679	2049203	30	34.961	84	14.612
BR-14	5.5	2.06	6.0	RT	> 5.5	1.0 [4]	576273	2048312	30	35.060	84	14.783
BR-15	5.5	1.82	6.0	LT	> 5.5	4.0 [4]	576862	2047193	30	35.157	84	14.994
BR-16	5.5	1.51	6.0	RT	> 5.5	5.0 [4]	577374	2045682	30	35.242	84	15.283
BR-17	5.5	1.40	6.0	LT	> 5.5	4.0 [4]	577333	2045080	30	35.236	84	15.396
BR-18	5.5	1.23	6.0	RT	> 5.5	3.0 [4]	577373	2044176	30	35.243	84	15.569
BR-19	5.5	1.12	6.0	LT	> 5.5	5.0 [4]	577343	2043625	30	35.238	84	15.675
BR-20	5.5	1.00	6.0	RT	> 5.5	4.0 [4]	577371	2043011	30	35.243	84	15.792
BR-21	5.5	0.84	6.0	LT	> 5.5	> 5.5	577342	2042152	30	35.237	84	15.958
BR-22	5.5	0.66	6.0	RT	> 5.5	> 5.5	577364	2041195	30	35.244	84	16.138
BR-23	5.5	0.34	6.0	LT	> 5.5	> 5.5	577327	2039483	30	35.235	84	16.465
BR-24	5.5	0.04	6.0	RT	> 5.5	> 5.5	577347	2037928	30	35.241	84	16.762

NOTES: 1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. BASED OFF 24 HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
3. DETERMINED WITH A TRIMBLE GEOEXPLORER XH GPS.
4. EXISTS IN A "PERCHED" STATE.

TABLE 2
REPORT OF TESTS
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

REPORT OF MATERIAL TESTS

STRATUM NO.	GRAIN-SIZE (PERCENT PASSING)								ATTERBERG LIMITS			CLASSIFICATION		DESCRIPTION	
	NUMBER OF TESTS	4	10	20	40	60	100	200	NUMBER OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	UNIFIED	AASHTO	COLOR	MATERIAL
1	4	100	100	97 - 99	72 - 94	37 - 65	23 - 45	21 - 26	2	18 - 22	6 - 7	SM	A-2-4	GRAY, BROWN	SILTY FINE SAND
2	10	100	100	98 - 100	90 - 99	68 - 92	50 - 71	26 - 35	4	17 - 36	11 - 20	SC	A-2-6	GRAY, BROWN	CLAYEY FINE SAND
3	26	100	100	97 - 100	70 - 99	42 - 96	39 - 81	37 - 49	12	17 - 39	11 - 19	SC	A-6	GRAY, BROWN, RED, ORANGE	CLAYEY SAND
4	8	100	100	90 - 100	86 - 100	65 - 99	55 - 98	51 - 80	6	41 - 46	18 - 25	CL	A-7-6	GRAY, BROWN, RED	SANDY CLAY

MATERIAL NOTES:

1. STRATUM 1 IS A "SELECT" MATERIAL AND IS SUITABLE FOR REUSE IN THE ROADWAY EMBANKMENT, HOWEVER; DUE TO THE HIGH FINES CONTENT THIS MATERIAL MAY BE DIFFICULT TO COMPACT WHEN WET.
2. STRATA 2, 3, AND 4 ARE "PLASTIC" SOILS AND MAY BE REUSED ABOVE THE EXISTING WATER TABLE AT THE TIME OF CONSTRUCTION TO WITHIN FOUR (4) FEET OF THE ROADWAY BASE. FOR CUT SECTIONS, "PLASTIC" SOILS SHOULD BE REMOVED TO A MINIMUM OF TWO (2) FEET BELOW THE ROADWAY BASE. MATERIALS FROM THESE STRATA WILL RETAIN MOISTURE AND BE DIFFICULT TO DRY AND COMPACT. IF THESE MATERIALS ARE REUSED THEY SHOULD BE PLACED UNIFORMLY IN THE LOWER PORTION OF THE EMBANKMENT FOR SOME DISTANCE, RATHER THAN FULL DEPTH FOR A SHORT DISTANCE.

RELATIVE DENSITY OR CONSISTENCY OF MATERIALS

GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 7	SOFT	1 - 3
MEDIUM DENSE OR COMPACT	7 - 21	FIRM	3 - 6
DENSE	21 - 35	STIFF	6 - 11
VERY DENSE	GREATER THAN 35	VERY STIFF	11 - 21
		HARD	GREATER THAN 21

TABLE 3
USDA SOIL SURVEY DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	UNIFIED MATERIAL CLASSIFICATION	AASHTO MATERIAL CLASSIFICATION	DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
BR-1, BR-2, BR-3, BR-4	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-5	33	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	
BR-6	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-7	39	0 - 26	PELHAM FINE SAND	SM	A-2-4	0.5 - 1.5
		26 - 80	PELHAM SANDY CLAY LOAM	SM, SC	A-2, A-4, A-6	
BR-8	10	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-9	52	0 - 9	YONGES FINE SANDY LOAM	SM	A-2-4	0.0 - 1.0
		9 - 71	YONGES SANDY CLAY LOAM	SC, CL	A-6, A-7	
		71 - 80	YONGES SANDY CLAY LOAM	SM, SC, CL	A-4, A-6	

NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA
2. REPORTED TO EXIST IN A "PERCHED" CONDITION
3. SEE **APPENDIX C** FOR DETAILED **USDA** SOIL SURVEY INFORMATION

TABLE 3 (CONT.)
USDA SOIL SURVEY DATA
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

BORING NUMBER	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	UNIFIED MATERIAL CLASSIFICATION	AASHTO MATERIAL CLASSIFICATION	DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
BR-10	11	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-11	52	0 - 9	YONGES FINE SANDY LOAM	SM	A-2-4	0.0 - 1.0
		9 - 71	YONGES SANDY CLAY LOAM	SC, CL	A-6, A-7	
		71 - 80	YONGES SANDY CLAY LOAM	SM, SC, CL	A-4, A-6	
BR-12	11	0 - 13	DOTHAN LOAMY FINE SAND	SM	A-2-4	3.5 - 4.0[2]
		13 - 46	DOTHAN SANDY LOAM	SC, SM	A-4, A-6	
		46 - 75	DOTHAN SANDY CLAY	SC, SM	A-4, A-6, A-7	
BR-13, BR-14, BR-15, BR-16	33, 34	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	
BR-17	41	0 - 61	PLUMMER FINE SAND	SM	A-2-4	0.0 - 1.5
		61 - 80	PLUMMER SANDY CLAY LOAM	SM, SC	A-2-4, A-2-6	
BR-18, BR-19, BR-20, BR-21, BR-22, BR-23, BR-24	33, 34, 35	0 - 10	ORANGEBURG FINE SANDY LOAM	SM	A-2-4	> 6.0
		10 - 80	ORANGEBURG SANDY CLAY LOAM	SC, CL	A-6, A-4	

NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA
2. REPORTED TO EXIST IN A "PERCHED" CONDITION
3. SEE **APPENDIX C** FOR DETAILED **USDA** SOIL SURVEY INFORMATION

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FIGURES

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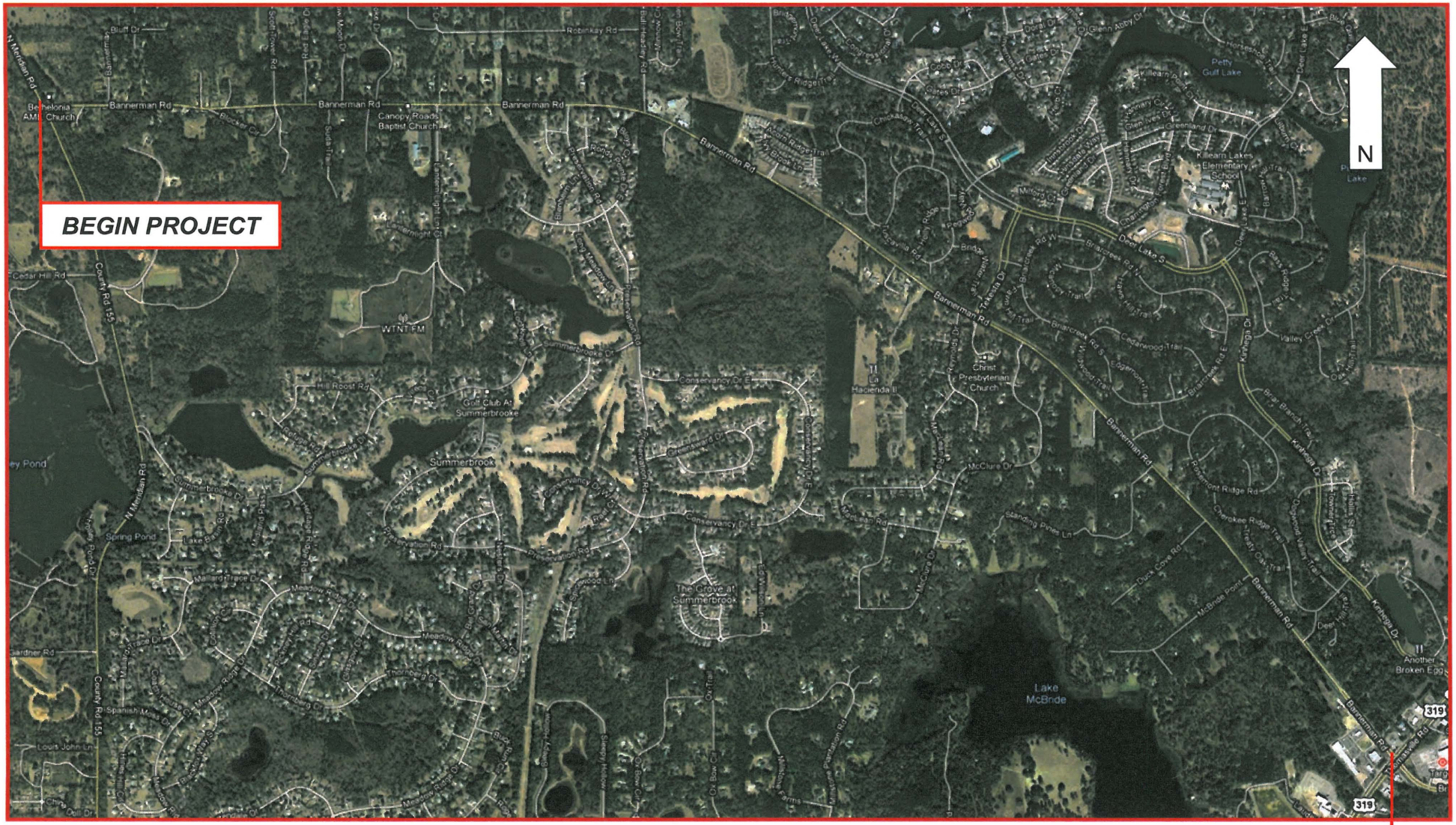

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308 OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050	TITLE: SITE LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: T. HAYDEN, P.E.			
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 / FIGURE NO.: 1

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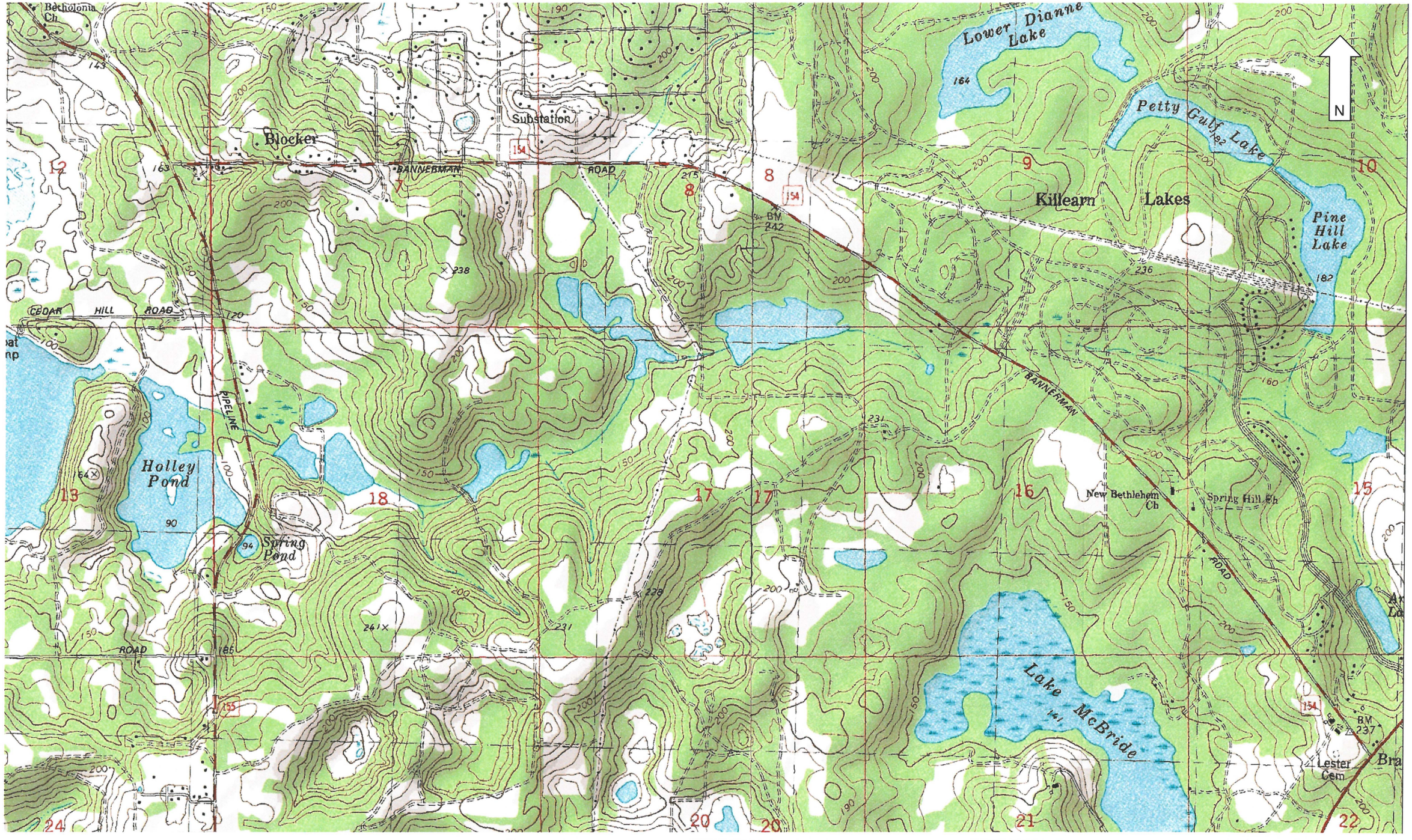

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.

3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

TITLE:
USGS – TOPOGRAPHIC MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 2

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DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.		TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 / FIGURE NO.: 3A

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc.	TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: T. HAYDEN, P.E.		3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308 OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 | FIGURE NO.: 3B

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.

3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 3C

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: T. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | **Fax #:** (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 3D

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc.	TITLE: SOIL BORING LOCATION MAP PRELIMINARY ROADWAY SOIL SURVEY BANNERMAN CORRIDOR STUDY BANNERMAN ROAD LEON COUNTY, FLORIDA
ENGINEER: T. HAYDEN, P.E.			
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.			
PROJ. NO.: 23-59-10-02	SCALE:		DATE: OCTOBER 2010 / FIGURE NO.: 3E

3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

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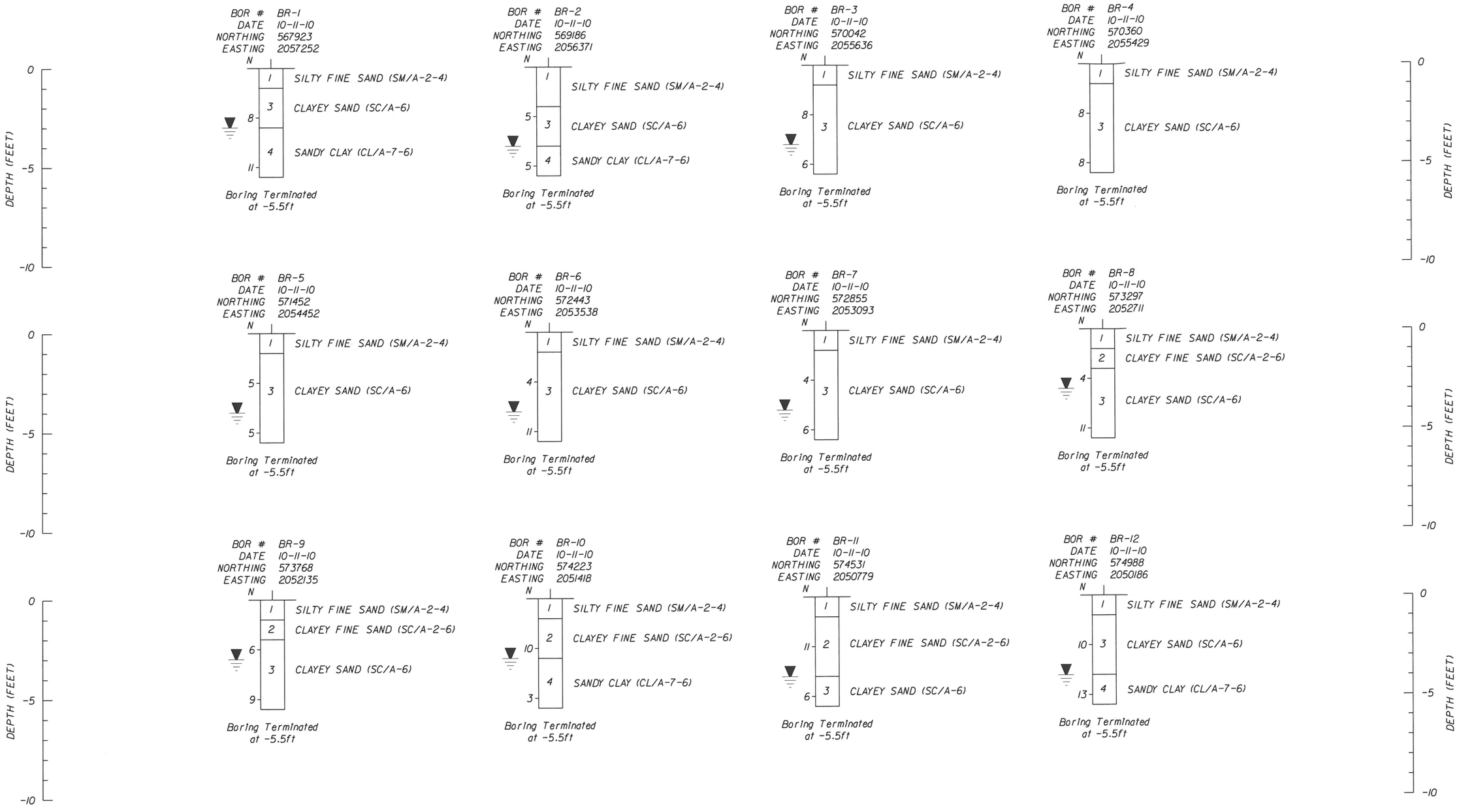


NOTES:

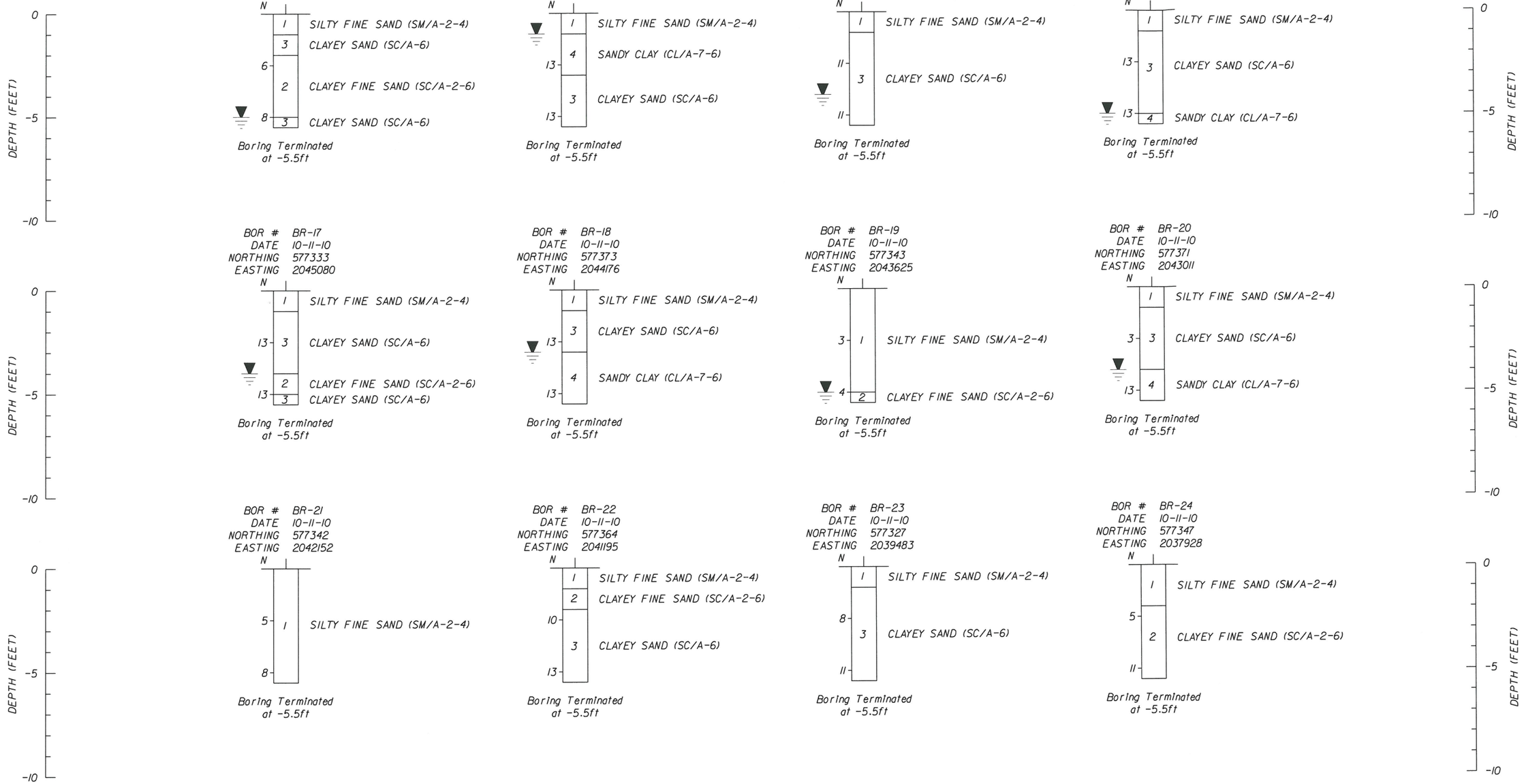
1. SOIL BORINGS PLOTTED TO DEPTH.
2. NUMBERS LEFT OF BORINGS INDICATE MEASURED STANDARD PENETRATION VALUES (SPT) 'N' VALUES.
3. NUMBERS IN CENTER OF BORING INDICATE STRATUM NUMBER.
4. ▼ ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER LEVEL.
5. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE SOIL BORINGS AT THE DATE OF INSTALLATION.

PREPARED BY:	M. LANDSCHOOT, E.I.
REVISED:	M. LANDSCHOOT, E.I.
CHECKED:	T. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

SCALE:	DATE: OCTOBER 2010
PROJ. NO.: 23-59-10-02	FIGURE NO.: 4A



NOTES:

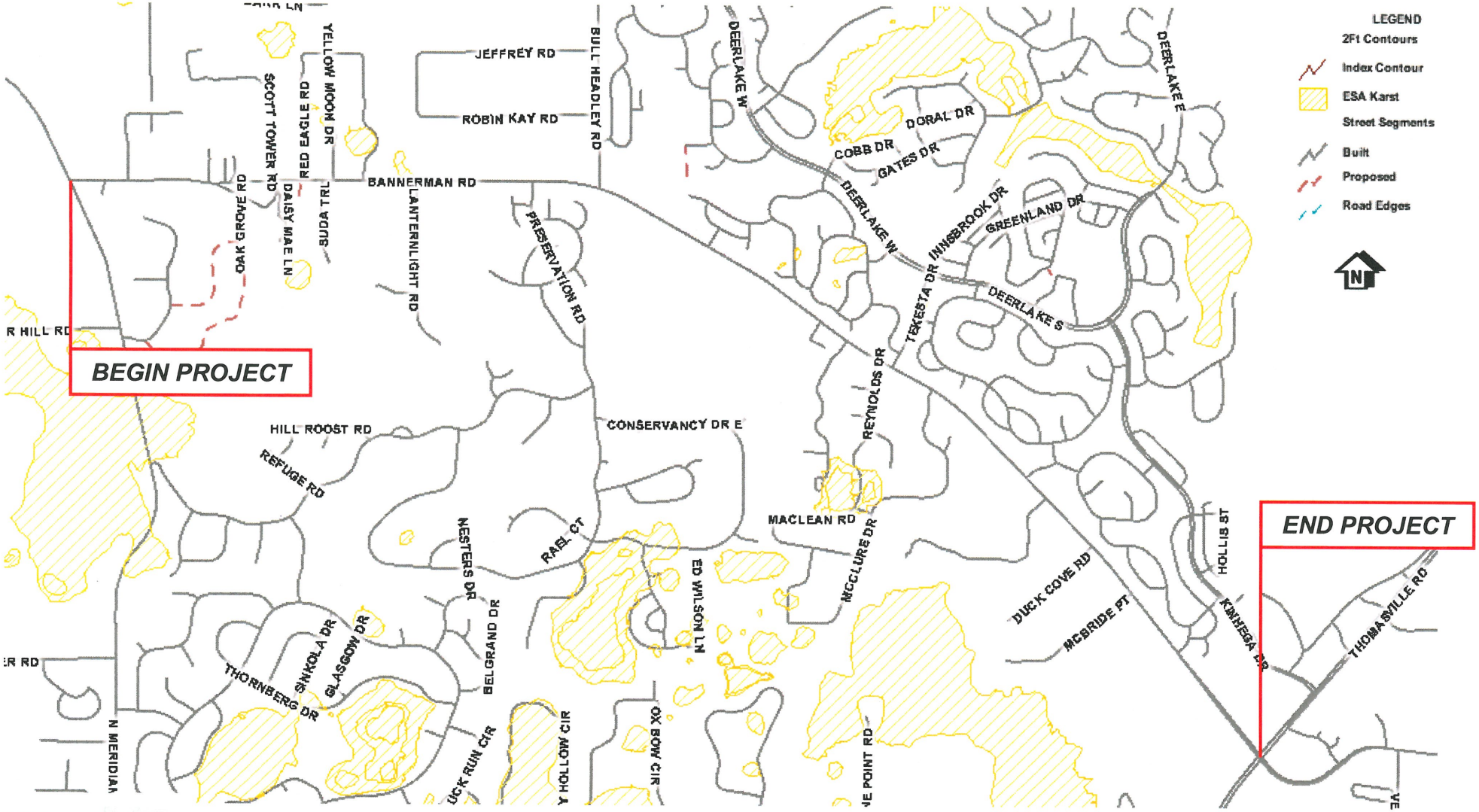
1. SOIL BORINGS PLOTTED TO DEPTH.
2. NUMBERS LEFT OF BORINGS INDICATE MEASURED STANDARD PENETRATION VALUES (SPT) 'N' VALUES.
3. NUMBERS IN CENTER OF BORING INDICATE STRATUM NUMBER.
4. ▼ ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER LEVEL.
5. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE SOIL BORINGS AT THE DATE OF INSTALLATION.

PREPARED BY:	M. LANDSCHOOT, E.I.
REVISED:	M. LANDSCHOOT, E.I.
CHECKED:	T. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL SURVEY
BANNERMAN ROAD CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

SCALE:	DATE: OCTOBER 2010
PROJ. NO.: 23-59-10-02	FIGURE NO.: 4B



Tallahassee-Leon County GIS
WWW.TLCGIS.ORG

TLCGIS Map Disclaimer: This product has been compiled from the most accurate source data from Leon County, the City of Tallahassee, and the Leon County Property Appraiser. However, this product is for reference purposes only and is not to be construed as a legal document or survey instrument. Any reliance on the information contained herein is at the user's own risk. Leon County, the City of Tallahassee, and the Leon County Property Appraiser assume no responsibility for any use of the information contained herein or any loss resulting therefrom.

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: T. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

TITLE:
KARST FEATURES MAP
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
BANNERMAN ROAD
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: 5

APPENDIX A
SOIL BORING LOGS

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-1 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY AND BROWN SILTY FINE SAND	SM A-2-4		13		
0.5	1					-200%=43	18		
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		19	8	
1	3						22		
	4			STIFF BROWN SANDY CLAY	CL A-7-6		23		
1.5	5					-200%=51 LL=42 PI=25	22	11	
	6								
2	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-2 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=26	9			
0.5	1						8			
	2			LOOSE BROWN CLAYEY SAND	SC A-6		13		5	
1	3						14			
	4			FIRM BROWN SANDY CLAY	CL A-7-6		24			
1.5	5					-200%=53 LL=41 PI=20	22		5	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-3 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
								10 20 30 40 60			10 20 30 40 60 80
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		11				
0.5	1			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=29 PI=14	16				
	2						16		8		
1	3			LOOSE BROWN CLAYEY SAND	SC A-6		14				
1.5	4						18				
	5					-200%=48	16		6		
2	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-4 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		5		
0.5	1					-200%=45 LL=24 PI=11	12		
1	2						15	8	
1.5	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		15		
2	4						15		
	5					-200%=40	14	8	
	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-5 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		8			
	1					-200%=45 LL=26 PI=11	15			
0.5	2			LOOSE BROWN CLAYEY SAND			18		5	●
	3				SC A-6		19			
1	4						18			
				LOOSE RED AND BROWN CLAYEY SAND						
1.5	5					-200%=47	17		5	●
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-6 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		4			
0.5	1					-200%=42 LL=27 PI=11	16			
	2			LOOSE BROWN CLAYEY SAND			19		4	
1	3				SC A-6		18			
	4			MEDIUM DENSE GRAY AND BROWN CLAYEY SAND			15			
1.5	5					-200%=42	15		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-7 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0								
				LOOSE GRAY SILTY FINE SAND	SM A-2-4		13		
0.5	1					-200%=48	18		
	2			LOOSE BROWN CLAYEY SAND			20	4	
1	3				SC A-6		20		
	4			LOOSE RED AND BROWN CLAYEY SAND			15		
1.5	5					-200%=37 LL=29 PI=15	16	6	
2	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-8 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		10		
0.5	1			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=34 LL=23 PI=12	13		
	2			LOOSE BROWN CLAYEY SAND			15	4	
1	3			LOOSE BROWN AND RED CLAYEY SAND	SC A-6		17		
1.5	4						16		
	5			MEDIUM DENSE BROWN AND RED CLAYEY SAND	SC A-6	-200%=49	17	11	
2	6								
	7								

Wc (%) scale: 10 20 30 40 60
N-Value* scale: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-9 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY CLAYEY FINE SAND	SM A-2-4		4			
0.5	1			LOOSE GRAY CLAYEY FINE SAND	SC A-2-6	-200%=34 LL=17 PI=11	8			
1	2			LOOSE BROWN CLAYEY SAND	SC A-6		13		6	
	3						14			
1.5	4						15			
	5			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=40	16		9	
2	6									
	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-10 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		18		
0.5	1					-200%=30	9		
	2			MEDIUM DENSE GRAY CLAYEY FINE SAND	SC A-2-6		7	10	
1	3						33		
	4			FIRM RED AND GRAY SANDY CLAY	CL A-7-6		24		
1.5	5					-200%=61 LL=46 PI=21	30	3	
2	6								
	7								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-11 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0						10	20 30 40 60		10	20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9				
0.5	1					-200%=35 LL=36 PI=17	10				
	2			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6		9		11	●	
1	3						5				
1.5	4			LOOSE BROWN CLAYEY SAND	SC A-6		10				
	5					-200%=44	11		6	●	
2	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-12 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		8	10 20 30 40 60		10	20 30 40 60 80
0.5	1					-200%=48	16				
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		16		10		
1	3						16				
1.5	4			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6		25				
	5					-200%=63 LL=43 PI=20	25		13		
2	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-13 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		11			
	1					-200%=42 LL=23 PI=11	14			
0.5				LOOSE BROWN CLAYEY SAND	SC A-6					
	2						8		6	
	3			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		9			
1	4					-200%=32	9			
1.5	5			LOOSE BROWN CLAYEY SAND	SC A-6		17		8	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-14 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0							10 20 30 40 60			10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		8				
0.5	1						17				
	2			VERY STIFF RED AND BROWN SANDY CLAY	CL A-7-6	-200%=65 LL=46 PI=18	24		13	●	
1	3						20				
	4			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		20				
1.5	5			MEDIUM DENSE RED AND BROWN CLAYEY SAND		-200%=46	17		13	●	
	6										
2	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-15 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9		
0.5	1					-200%=48 LL=27 PI=11	16		
	2						17	11	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		17		
	4						19		
1.5	5					-200%=49	18	11	
2	6								
	7								

Wc (%): 10 20 30 40 60

N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-16 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⌭ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		9			
0.5	1						18			
	2					-200%=37 LL=39 PI=19	14		13	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		12			
	4						11			
1.5	5			VERY STIFF BROWN SANDY CLAY	CL A-7-6	-200%=52	19		13	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-17 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		10			
0.5	1			LOOSE ORANGE CLAYEY SAND	SC A-6	-200%=49 LL=17 PI=11	15			
	2						20		3	
1	3						21			
1.5	4			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	13			
	5			LOOSE BROWN CLAYEY SAND	SC A-6		20		3	
2	6									
	7									

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-18 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		9			
0.5	1					-200%=49	17			
	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		13	
1	3						22			
1.5	4			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6		24			
	5					-200%=79 LL=42 PI=21	22		13	
2	6									
	7									

Wc (%) scale: 10 20 30 40 60

N-Value* scale: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-19 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⊂ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
							8			
	1					-200%=26 LL=18 PI=6	9			
0.5	2									
				LOOSE BROWN SILTY FINE SAND	SM A-2-4		12		3	
1	3						11			
	4						11			
1.5	5			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	14		4	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-20 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY SILTY FINE SAND	SM A-2-4		9			
0.5	1					-200%=37 LL=25 PI=13	12			
	2			LOOSE ORANGE CLAYEY SAND	SC A-6		15		3	
1	3						16			
	4			VERY STIFF BROWN SANDY CLAY	CL A-7-6		21			
1.5	5					-200%=80	25		13	
	6									
2	7									

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-21 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=21	6	5	
0.5	1			LOOSE GRAY SILTY FINE SAND			7		
1	2			LOOSE BROWN SILTY FINE SAND			10		
1.5	3						9		
2	4						10		
	5					-200%=21 LL=22 PI=7	8	8	
	6								
	7								

Wc (%): 10 20 30 40 60

N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-22 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	N-Value*
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		5	10 20 30 40 60		10	20 30 40 60 80
0.5	1			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=32	8				
1	2			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		11		10		
1.5	3						11				
2	4						10				
	5					-200%=39 LL=27 PI=13	10		13		
	6										
	7										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-23 **DATE:** 10-11-2010
DRILLER: J. ALVAREZ **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		2			
0.5	1					-200%=46 LL=29 PI=15	14			
	2						12		8	
1	3			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		12			
	4						12			
1.5	5					-200%=43	12		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN CORRIDOR STUDY
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.
PROJECT NO.: 23-59-10-02
PROJECT LOCATION: LEON COUNTY, FLORIDA **ELEVATION (FEET):**
BORING NO.: BR-24 **DATE:** 10-11-2010
DRILLER: R. ROGERS **FLUID LOSS:** NONE
DEPTH TO -WATER> INITIAL: ▽ > 5.5' **AFTER 24 HOURS:** ▽ > 5.5' **CAVING>** ⊂ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*
0	0							10 20 30 40 60		10 20 30 40 60 80
				LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=26	10			
0.5	1						8			
	2						15		5	
1	3			LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		14			
	4						13			
1.5	5			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=30 LL=35 PI=20	14		11	
	6									
2	7									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Figure

APPENDIX B
SOIL CLASSIFICATION DATA

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-1

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	13												SM	A-2-4	1	MEDIUM DENSE GRAY AND BROWN SILTY FINE SAND
1.0 - 1.5	18	100	100	100	98	90	71	43					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	19											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	22												CL	A-7-6	4	STIFF BROWN SANDY CLAY
4.0 - 4.5	23												CL	A-7-6	4	STIFF BROWN SANDY CLAY
5.0 - 5.5	22	100	100	100	99	92	75	51	42	25		11	CL	A-7-6	4	STIFF BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-2

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	8	100	100	98	91	79	56	26					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0 - 2.5	13											5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	24												CL	A-7-6	4	FIRM BROWN SANDY CLAY
5.0 - 5.5	22	100	100	100	98	93	79	53	41	20		5	CL	A-7-6	4	FIRM BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-3 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	11												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0 - 1.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	16	100	100	100	98	91	75	48	29	14		8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	98	91	75	48				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-4

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	5												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	12	100	100	100	98	90	72	45	24	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	15											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	14	100	100	100	98	90	70	40				8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-5

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	15	100	100	100	98	92	73	45	26	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	18											5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	18												SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND
5.0 - 5.5	17	100	100	100	99	94	77	47				5	SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-6 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	16	100	100	100	95	92	71	42	27	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	19											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
5.0 - 5.5	15	100	100	99	96	89	70	42				11	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-7

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	13												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	18	100	100	100	99	93	75	48					SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	20											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	20												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	96	67	48	37	29	15		6	SC	A-6	3	LOOSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-8 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	13	100	100	99	98	90	70	34	23	12			SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
2.0 - 2.5	15											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	17												SC	A-6	3	LOOSE BROWN AND RED CLAYEY SAND
4.0 - 4.5	16												SC	A-6	3	LOOSE BROWN AND RED CLAYEY SAND
5.0 - 5.5	17	100	100	98	96	89	72	49				11	SC	A-6	3	MEDIUM DENSE BROWN AND RED CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-9

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	4												SM	A-2-4	1	LOOSE GRAY CLAYEY FINE SAND
1.0 - 1.5	8	100	100	100	98	91	67	34	17	11			SC	A-2-6	2	LOOSE GRAY CLAYEY FINE SAND
2.0 - 2.5	13											6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0 - 3.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0 - 4.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	16	100	100	100	98	91	73	40				9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-10

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	18												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	9	100	100	100	97	88	63	30					SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
2.0 - 2.5	7											10	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
3.0 - 3.5	33												CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY
4.0 - 4.5	24												CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY
5.0 - 5.5	30	100	100	99	98	93	79	61	46	21		3	CL	A-7-6	4	FIRM RED AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-11

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	10	100	100	100	98	92	71	35	36	17			SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0 - 2.5	9											11	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
3.0 - 3.5	5												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
4.0 - 4.5	10												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0 - 5.5	11	100	100	100	98	91	68	44				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-12 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	16	100	100	99	98	93	76	48					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	16											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	25												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
5.0 - 5.5	25	100	100	90	86	83	78	63	43	20		13	CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-13

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	14	100	100	100	99	96	81	42	23	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0 - 2.5	8											6	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0 - 3.5	9												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0 - 4.5	9	100	100	100	98	91	65	32					SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	17											8	SC	A-6	3	LOOSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-14

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	17												CL	A-7-6	4	VERY STIFF RED AND BROWN SANDY CLAY
2.0 - 2.5	24	100	100	100	99	96	86	65	46	18		13	CL	A-7-6	4	VERY STIFF RED AND BROWN SANDY CLAY
3.0 - 3.5	20												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	20												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	17	100	100	100	97	91	73	46				13	SC	A-6	3	MEDIUM DENSE RED AND BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-15

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	16	100	100	100	98	92	76	48	27	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	17											11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	17												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	19												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	18	100	100	100	98	93	77	49				11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-16

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	14	100	100	99	70	42	39	37	39	19		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	11												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	19	100	100	100	100	65	55	52				13	CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-17

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	15	100	100	98	96	91	71	49	17	11			SC	A-6	3	LOOSE ORANGE CLAYEY SAND
2.0 - 2.5	20											3	SC	A-6	3	LOOSE ORANGE CLAYEY SAND
3.0 - 3.5	21												SC	A-6	3	LOOSE ORANGE CLAYEY SAND
4.0 - 4.5	13	100	100	100	96	84	69	32					SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	20											3	SC	A-6	3	LOOSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-18

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0 - 1.5	17	100	100	99	93	82	76	49					SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	18											13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	22												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
4.0 - 4.5	24												CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
5.0 - 5.5	22	100	100	100	100	99	98	79	42	21		13	CL	A-7-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-19 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	8												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	9	100	100	98	89	61	44	26	18	6			SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0 - 2.5	12											3	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0 - 3.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
4.0 - 4.5	11												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
5.0 - 5.5	14	100	100	99	91	68	50	32				4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-20

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	9												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	12	100	100	99	90	68	52	37	25	13			SC	A-6	3	LOOSE ORANGE CLAYEY SAND
2.0 - 2.5	15											3	SC	A-6	3	LOOSE ORANGE CLAYEY SAND
3.0 - 3.5	16												SC	A-6	3	LOOSE ORANGE CLAYEY SAND
4.0 - 4.5	21												CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY
5.0 - 5.5	25	100	100	100	99	97	93	80				13	CL	A-7-6	4	VERY STIFF BROWN SANDY CLAY

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-21 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	6												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0 - 1.5	7	100	100	99	93	62	37	21					SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
2.0 - 2.5	10											5	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0 - 3.5	9												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
4.0 - 4.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
5.0 - 5.5	8	100	100	97	72	37	23	21	22	7		8	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

Boring: BR-22

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	5												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	8	100	100	98	90	74	56	32					SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0 - 2.5	11											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	11												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	10												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	10	100	100	97	87	71	58	39	27	13		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

EGS

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC. **Project No.: 23-59-10-02**

Boring: BR-23 **Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	2												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0 - 1.5	14	100	100	99	97	92	73	46	29	15			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0 - 2.5	12											8	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0 - 3.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0 - 4.5	12												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0 - 5.5	12	100	100	99	97	91	72	43				11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

Project: BANNERMAN CORRIDOR STUDY

Client: REYNOLDS, SMITH, AND HILLS, INC.

Project No.: 23-59-10-02

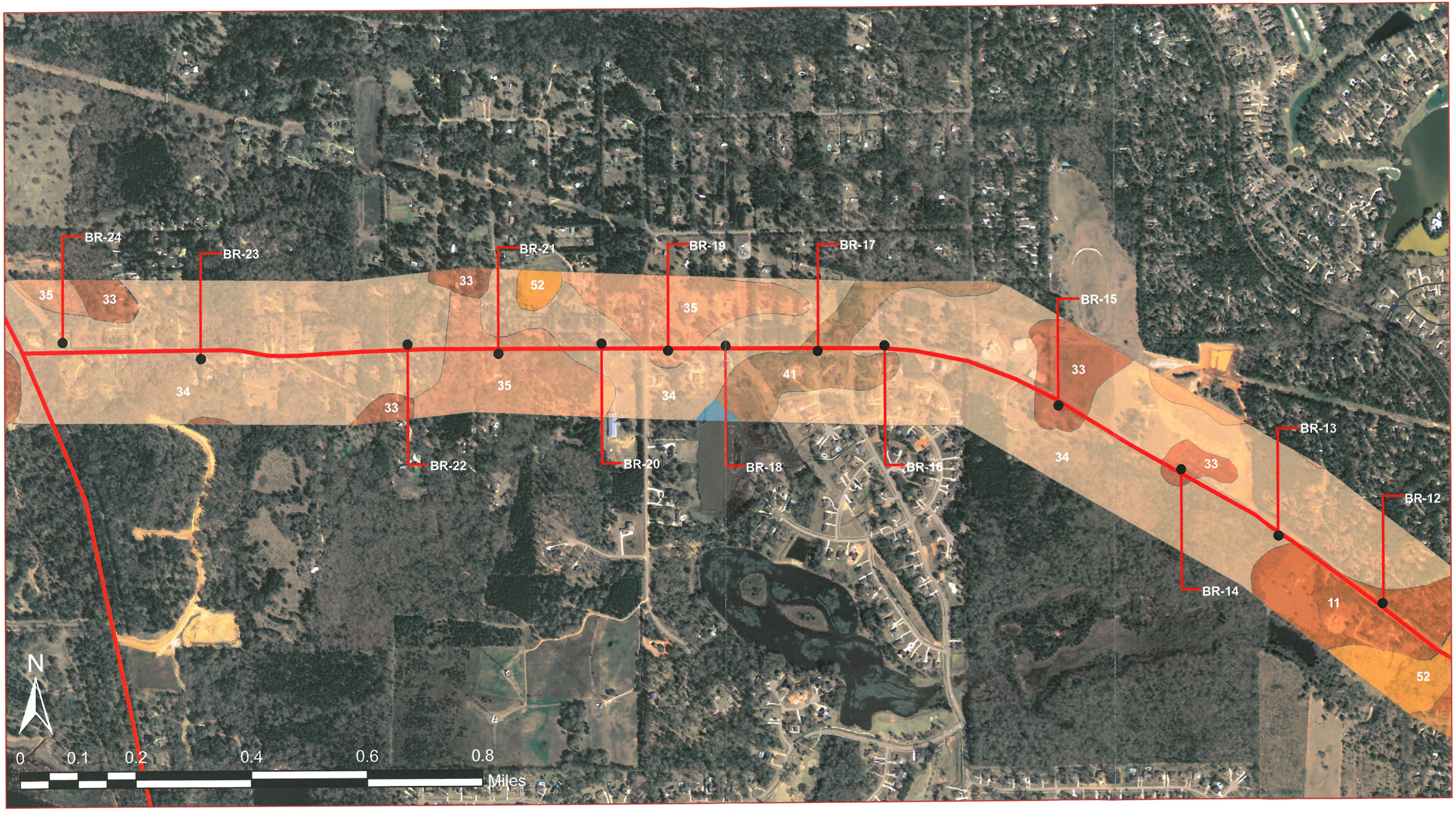
Boring: BR-24

Location: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	USCS	AASHTO	Mat. No.	Description
0.0 - 0.5	10												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0 - 1.5	8	100	100	99	94	65	45	26					SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
2.0 - 2.5	15											5	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0 - 3.5	14												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0 - 4.5	13												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
5.0 - 5.5	14	100	100	100	99	92	71	30	35	20		11	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND

EGS

APPENDIX C
USDA SOIL SURVEY



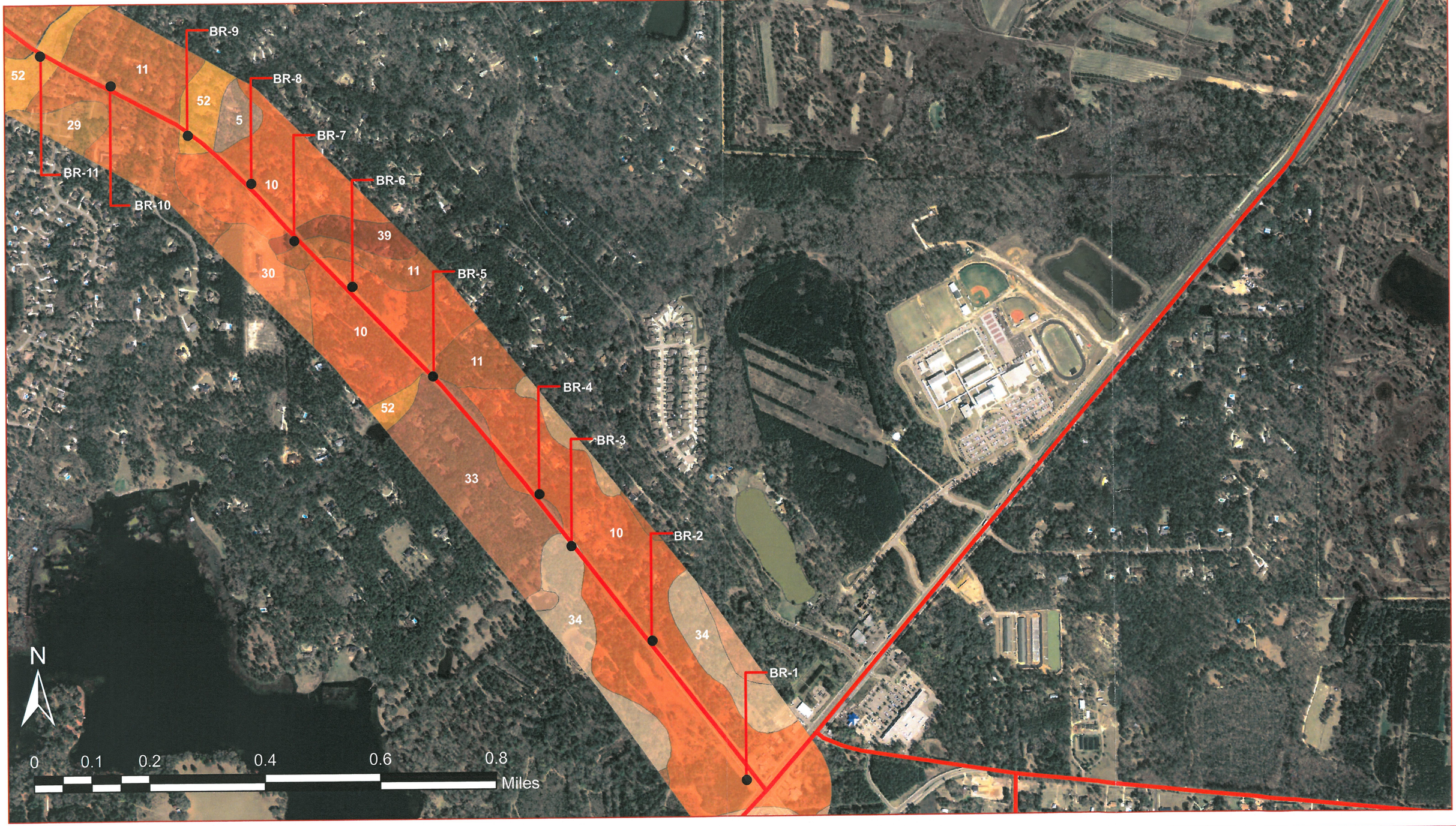
- SOIL BORING

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: C-1



● - SOIL BORING

DRAWN: M. LANDSCHOOT, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH, AND HILLS, INC.	
PROJ. NO.: 23-59-10-02	SCALE:

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY
PRELIMINARY ROADWAY SOIL SURVEY
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: OCTOBER 2010	FIGURE NO.: C-2

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
8---------- Chipley	0-15	Fine sand-------	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
	15-80	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
9---------- Dorovan	0-5	Mucky peat------	Pt	---	0	---	---	---	---	---	---
	5-65	Muck------------	Pt	---	0	---	---	---	---	---	---
	65-80	Sand, loamy sand, loam.	SP-SM, SM-SC, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
10, 11---------- Dothan	0-13	Loamy fine sand	SM	A-2	0	95-100	92-100	60-80	13-30	---	NP
	13-46	Sandy clay loam, sandy loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	92-100	68-90	23-45	<40	NP-15
	46-75	Sandy clay loam, sandy clay.	SM-SC, SC, SM	A-2, A-4, A-6, A-7	0	95-100	92-100	70-95	30-50	25-45	4-18
12, 13, 14--------- Faceville	0-13	Sandy loam------	SM, SM-SC	A-2, A-4	0	90-100	85-100	72-97	17-38	<25	NP-5
	13-80	Sandy clay, clay, clay loam.	CL, SC	A-6, A-7	0	98-100	95-100	75-99	45-72	25-43	11-23
15---------- Foxworth	0-46	Sand------------	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	46-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	50-100	1-12	---	NP
16, 17---------- Fuquay	0-37	Fine sand-------	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-20	---	NP
	37-64	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	60-80	23-45	<35	NP-18
	64-80	Sandy clay loam	SC, CL	A-2, A-4, A-6	0	95-100	90-100	60-93	28-55	20-39	8-25
18, 19---------- Kershaw	0-80	Sand------------	SP, SP-SM	A-2, A-3	0	98-100	98-100	50-80	1-7	---	NP
20:* Kershaw---------- Urban land.	0-80	Sand------------	SP, SP-SM	A-2, A-3	0	98-100	98-100	50-80	1-7	---	NP
21---------- Lakeland	0-78	Sand------------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
	78-91	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
22---------- Leefield	0-36	Loamy sand------	SM, SW-SM, SP-SM	A-2	0	98-100	95-100	65-95	10-20	---	NP
	36-51	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	93-100	65-95	20-40	<40	NP-16
	51-80	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	95-100	65-90	20-40	<40	NP-20

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
23---------- Leon	0-25	Sand----------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	25-41	Sand, fine sand	SM, SP-SM, SP	A-3, A-2-4	0	100	100	80-100	3-20	---	NP
	41-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
24, 25---------- Lucy	0-30	Fine sand-------	SM, SP-SM	A-2	0	98-100	95-100	50-87	10-30	---	NP
	30-36	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	97-100	95-100	55-95	15-50	10-30	NP-15
	36-80	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, SM	A-2, A-6, A-4	0	100	95-100	60-95	20-50	20-40	5-20
26---------- Lutterloh	0-59	Fine sand-------	SP, SP-SM SM	A-3, A-2-4	0	100	100	85-95	2-15	---	NP
	59-71	Fine sandy loam, very fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	100	100	85-95	20-40	<35	NP-20
	71-80	Sandy clay loam, sandy clay.	SC, CL, CH	A-6, A-7	0	100	100	90-100	40-60	35-70	20-42
27---------- Lynchburg	0-18	Fine sandy loam	SM, ML	A-2, A-4	0	92-100	90-100	75-100	25-65	<30	NP-7
	18-65	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	Variable--------	---	---	---	---	---	---	---	---	---
28*---------- Meggett	0-12	Very fine sandy loam	SM	A-2, A-4	0	100	90-100	85-100	13-41	---	NP
	12-50	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	0	100	90-100	85-100	51-90	30-70	20-40
	50-80	Sandy clay, clay loam, sandy clay loam.	CL, SC, SM	A-4, A-6, A-2	0	90-100	65-100	50-100	40-60	<40	NP-25
29, 30---------- Norfolk	0-8	Loamy fine sand	SM	A-2	0	95-100	92-100	50-91	13-30	<20	NP
	8-58	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-38	4-15
	58-80	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6	0	100	98-100	65-98	36-72	20-45	4-22
31---------- Norfolk	0-7	Loamy sand------	SM	A-2-4	0	95-100	95-100	85-95	13-25	---	NP
	7-14	Sandy loam------	SM, SM-SC	A-2-4	0	95-100	95-100	85-95	13-35	<23	NP-7
	14-64	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	95-100	95-100	85-95	30-55	20-40	4-20
	64-80	Sandy clay, clay	CH	A-7	0	95-100	95-100	85-100	51-100	50-100	23-60

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
32----------	0-29	Sand----------	SM, SP-SM	A-2, A-3	0	100	95-100	75-100	8-35	---	NP
Ocilla	29-80	Sandy loam, sandy clay loam.	SM, CL, SC	A-2, A-4, A-6	0	100	95-100	80-100	30-55	<40	NP-18
33, 34, 35----------	0-10	Fine sandy loam	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
Orangeburg	10-80	Sandy clay loam	SC, CL	A-6, A-4	0	98-100	95-100	71-91	38-55	22-40	8-19
36:*											
Orangeburg--------	0-10	Fine sandy loam	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
	10-80	Sandy clay loam	SC, CL	A-6, A-4	0	98-100	95-100	71-91	38-55	22-40	8-19
Urban land.											
37----------	0-10	Sand----------	SP, SP-SM	A-3	0	100	100	90-100	3-8	---	NP
Ortega	10-99	Fine sand, sand	SP, SP-SM	A-3	0	100	100	90-100	2-7	---	NP
38:*											
Pamlico----------	0-32	Muck----------	Pt	---	0	---	---	---	---	---	---
	32-80	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	---	NP
Dorovan----------	0-5	Mucky peat------	Pt	---	0	---	---	---	---	---	---
	5-65	Muck----------	Pt	---	0	---	---	---	---	---	---
	65-80	Sand, loamy sand, loam.	SP-SM, SM-SC, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
39----------	0-26	Fine sand-------	SM	A-2	0	100	95-100	75-90	15-30	---	NP
Pelham	26-80	Sandy clay loam, sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	65-90	30-50	15-30	2-12
40.*											
Pits											
41----------	0-61	Fine sand-------	SM, SP-SM	A-2-4, A-3	0	100	100	75-96	5-26	---	NP
Plummer	61-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2-4, A-2-6	0	100	97-100	76-96	26-35	<31	NP-14
42----------	0-60	Mucky fine sand	SM, SP-SM	A-2-4, A-3	0	100	100	75-96	5-26	---	NP
Plummer	60-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2-4, A-2-6	0	100	97-100	76-96	26-35	<31	NP-14
43, 44*----------	0-23	Loamy fine sand	SM, SP-SM	A-2, A-3	0	95-100	95-100	50-80	5-35	<25	NP
Rutlege	23-82	Sand, loamy sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	0	95-100	95-100	50-80	2-25	<20	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
45---------- Sapelo	0-14	Fine sand-------	SM, SP, SP-SM	A-2, A-3	0	100	100	90-100	4-20	---	NP
	14-26	Fine sand, sand	SM, SP-SM	A-2, A-3	0	100	100	95-100	8-20	---	NP
	26-43	Fine sand, sand	SM, SP, SP-SM	A-2, A-3	0	100	100	90-100	4-20	---	NP
	43-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	90-100	20-50	<40	NP-20
46---------- Surrency	0-36	Loamy sand------	SM	A-2	0	100	95-100	50-75	15-26	---	NP
	36-65	Sandy clay loam	SM, SC, SM-SC	A-2, A-6, A-4	---	100	95-100	80-98	30-44	<34	NP-21
47---------- Talquin	0-25	Fine sand-------	SP, SM, SP-SM	A-3, A-2-4	0	100	100	80-100	2-15	---	NP
	25-37	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	80-100	5-20	---	NP
	37-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
48---------- Troup	0-44	Fine sand-------	SM	A-2, A-4	0	100	100	65-90	15-40	---	NP
	44-80	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2	0	95-100	95-100	70-90	24-55	19-30	4-10
49.* Urban land											
50, 51---------- Wagram	0-31	Loamy fine sand	SM	A-2	0	100	98-100	50-85	15-35	---	NP
	31-62	Sandy clay loam, sandy loam.	SC	A-2, A-4, A-6	0	100	98-100	80-95	31-49	21-40	8-25
52---------- Yonges	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	90-100	25-55	<30	NP-7
	9-71	Sandy clay loam, clay loam.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	0	100	100	95-100	40-70	25-45	6-25
	71-80	Fine sandy loam, sandy clay loam.	CL, ML, SC, SM	A-4, A-6	0	100	100	80-100	40-65	20-40	3-22

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the text explain terms such as "rare," "brief," "apparent," and "perched." Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
1---------- Albany	C	---	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	---	High------	High.
2:* Albany---------- Urban land.	C	---	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	---	High------	High.
3---------- Alpin	A	None--------	---	---	>6.0	---	---	>90	---	---	---	Low-------	High.
4.* Arents													
5---------- Blanton	A	None--------	---	---	5.0-6.0	Perched	Jan-Apr	>60	---	---	---	High------	High.
6---------- Bonifay	A	None--------	---	---	4.0-5.0	Perched	Jan-Feb	>60	---	---	---	Low-------	High.
7---------- Chaires	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High------	High.
8---------- Chipley	C	None--------	---	---	2.0-3.0	Apparent	Jun-Sep	>60	---	---	---	Low-------	High.
9**---------- Dorovan	D	Frequent----	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	---	4-8	75	High------	High.
10, 11---------- Dothan	B	None--------	---	---	3.5-4.0	Perched	Jan-Apr	>60	---	---	---	Moderate	Moderate
12, 13, 14-------- Faceville	B	None--------	---	---	>6.0	---	---	>60	---	---	---	Low-------	Moderate
15---------- Foxworth	A	None--------	---	---	3.5-6.0	Apparent	Jun-Oct	>60	---	---	---	Low-------	High.
16, 17---------- Fuquay	B	None--------	---	---	2.5-4.0	Perched	Jan-Mar	>60	---	---	---	Low-------	High.
18, 19---------- Kershaw	A	None--------	---	---	>6.0	---	---	>60	---	---	---	Low-------	High.

See footnotes at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
20:* Kershaw	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
Urban land.													
21--- Lakeland	A	None	---	---	>6.0	---	---	>72	---	---	---	Low	Moderate.
22--- Leefield	C	None	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	Moderate	High.
23--- Leon	A/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	High.
24, 25--- Lucy	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
26--- Lutterloh	C	None	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	High	Moderate.
27--- Lynchburg	B/D	None	---	---	0.5-1.5	Apparent	Nov-Apr	>60	---	---	---	High	High.
28*--- Meggett	D	Frequent	Long	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High	Moderate.
29, 30--- Norfolk	B	None	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	---	---	Moderate	High.
31--- Norfolk	B	None	---	---	5.0-6.0	Perched	Jan-Apr	>60	---	---	---	Moderate	High.
32--- Ocilla	C	None	---	---	1.0-2.5	Apparent	Dec-Apr	>60	---	---	---	High	Moderate.
33, 34, 35--- Orangeburg	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.
36:* Orangeburg	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.
Urban land.													

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
37--- Ortega	A	None---	---	---	3.5-5.0	Apparent	Jun-Jan	>60	---	---	---	Low---	High.
38:*													
Pamlico**---	D	Frequent---	Very long	Nov-Jun	+1-1.0	Apparent	Nov-Jul	>60	---	4-12	10-36	High---	High.
Dorovan**---	D	Frequent---	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	---	4-8	75	High---	High.
39--- Pelham	B/D	None---	Brief---	Dec-Mar	0.5-1.5	Apparent	Jan-Apr	>60	---	---	---	High---	High.
40.* Pits													
41--- Plummer	B/D	None---	---	---	0-1.5	Apparent	Dec-Jul	>60	---	---	---	Moderate	High.
42**--- Plummer	B/D	None---	---	---	+2-1.5	Apparent	Dec-Jul	>60	---	---	---	Moderate	High.
43, 44*--- Rutlege	D	Common---	Brief---	Dec-May	0-1.0	Apparent	Dec-May	>60	---	---	---	High---	High.
45--- Sapelo	D	None---	---	---	1.5-2.5	Apparent	Nov-Apr	>60	---	---	---	High---	High.
46--- Surrency	D	Common---	Very long	Dec-Mar	0-0.5	Apparent	Dec-Apr	>60	---	---	---	High---	High.
47--- Talquin	B/D	None---	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High---	High.
48--- Troup	A	None---	---	---	>6.0	---	---	>60	---	---	---	Low---	Moderate.
49.* Urban land													
50, 51--- Wagram	A	None---	---	---	>6.0	---	---	>60	---	---	---	Low---	High.
52--- Yonges	D	Frequent---	Long---	Nov-Mar	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High---	Moderate.

* See description of the map unit for composition and behavior characteristics of the map unit.

** In the "High water table--Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Appendix C

Preliminary Infiltration Investigation

PRELIMINARY INFILTRATION INVESTIGATION

BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

Prepared For:

REYNOLDS, SMITH & HILLS, INC.
1701 HERMITAGE BOULEVARD
SUITE 101
TALLAHASSEE, FLORIDA 32308

Prepared By:

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.
3154 ELIZA ROAD
TALLAHASSEE, FLORIDA 32308
(850) 386-1253

June 2011
23-59-10-01

EGS

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

June 6, 2011

EGS File Number: 23-59-10-01

Reynolds, Smith & Hills, Inc.
1701 Hermitage Blvd.
Suite 101
Tallahassee, FL 32308

ATTN: Nicholi Arnio, P.E.
Project Manager

SUBJECT: **Results of Preliminary Infiltration Investigation**
Bannerman Road Corridor Study
Leon County, Florida

Dear Nicholi:

Environmental and Geotechnical Specialists, Inc. (**EGS**) has completed the Preliminary Infiltration Investigation, as authorized by **Reynolds, Smith & Hills, Inc. (RS&H),** for the Bannerman Road Corridor Study. The project segment considered in the investigation begins near Reynolds Drive and ends at Thomasville Road. The data presented in the report will likely not apply for any other segment.

This Report includes a summary of the preliminary infiltration investigation conducted for this project, a synopsis of field and laboratory test data, both measured and estimated "normal" seasonal high groundwater results, likely karst features of the infiltration areas, and preliminary infiltration rates based on the materials encountered.

PROJECT AREA AND CONDITIONS

The project corridor is located along Bannerman Road beginning at Reynolds Drive and ending at Thomasville Road in Tallahassee, Florida. A Site Location Map has been provided as **Figure 1.**

A review of the United States Geological Survey's (**USGS**) Topographic Map of the project area indicates the topography of the project area consists of rolling hills varying between EL 200 feet and EL 235 feet. The drainage appears to be routed through existing swales and low lying wetland areas. Permanent groundwater appears to be around EL 185 feet. A copy of the **USGS** Topographic Map of the project area has been included as **Figure 2.**

The majority of the project area site is surrounded by woodlands and commercial/residential developments. The existing roadway is mostly two (2) lanes, but increases to four (4) lanes when approaching Thomasville Road from the west. The vegetation in this area is composed of ornamental landscaping and trees. Photographs of the project area have been provided as **Figures 3A** thru **3D.**

SCOPE OF SERVICES

The Scope of Services authorized by the **RS&H, Inc.** for this project consisted of the following:

- Installing eighteen (18) standard penetration tests (**SPT**) soil borings to a depth of 25 feet;
- Testing representative soil samples for uniformity and classification;
- Evaluating the existing subsurface conditions;
- Measuring the depths to existing groundwater and estimating the depths to "normal" seasonal high groundwater;
- Reporting likely Karst features located within the project infiltration areas;
- Developing "preliminary" permeability rates for each soil strata encountered; and;
- Preparation of this Report.

SUBSURFACE INVESTIGATION

The subsurface investigation outlined in this Report was conducted in May 2011 with Matt Monteith, E.I., serving as the Staff Engineer and Myron L. Hayden, Ph.D., P.E., serving as Principal Geotechnical Engineer.

The eighteen (18) Soil Borings installed for this study, labeled **PB-1** to **PB-18**, were located in the field using a Trimble GeoExplorer 2008 series Global Positioning Satellite (**GPS**) hand held unit. The boring locations were determined by **RS&H, Inc**. Several of the borings were not installed at the original location requested due to overhead power lines and buried utilities. A Boring Location Map has been included as **Figure 4A** to **4F** with detailed location information for each soil boring provided in **TABLE 1**.

To provide higher accuracy in water level measurements, **EGS** installed the borings without the use of drilling fluid. The borings were advanced using three (3) inch diameter casing for the entire boring depth. The depth of water encountered was measured using a Durham Geo Slope Water Level Indicator.

To reduce the chance of impacting a buried utility, **EGS installed** the first seven and one-half (7 ½) feet of each soil boring using a hand auger. To evaluate the uniformity and relative density of the subsoils, Static Hand Cone Penetrometer Index (**CPI**) tests were conducted at depths of two and one-half (2 ½), and five (5) feet in each soil boring.

Below a depth of seven and one-half (7 ½) feet the soil borings were installed using **EGS's** BK 51 HD, CME 550X, or CME 75 rotary drill with Standard Penetration Tests (**SPT**) conducted on two and one-half (2 ½) feet intervals to the boring termination depth.

To facilitate uniformity, the **CPI** test values have been converted to equivalent **SPT "N"** values using the correlation **N = "C"/4**. The **SPTs** were conducted in accordance with ASTM D 1586. All **SPT** samples were classified in the field by **EGS** personnel, sealed, and transported to **EGS's** laboratory for additional testing. The laboratory tests included water contents, grain-size distributions, and Atterberg limits. All soil samples were classified with respect to the Unified Soil Classification (**UNIFIED**) System and the American Association of State Highway and Transportation Officials (**AASHTO**) Soil Classification System.

The results of the laboratory tests are summarized in the Report of Tests provided in **APPENDIX A,** Soil Boring Logs provided in **APPENDIX B,** and Soil Classification Data provided in **APPENDIX C**.

SUBSURFACE CONDITIONS

Soils

As can be seen in the Soil Profiles provided as **Figure 5A** to **5B,** and the Report of Core Borings provided in **APPENDIX A**, the following materials were encountered:

- Silty Fine Sand **(SM / A-2-4 / STRATUM 1)**
- Clayey Fine Sand **(SC / A-2-6 / STRATUM 2)**
- Clayey Sand **(SC / A-6 / STRATUM 3)**
- Sandy Clay **(CL / A-6 / STRATUM 4)**
- Sandy to Highly Plastic Clay **(CL/CH / A-7-6 / STRATUM 5)**

In general, the ground surface was found to be covered with a thin layer of Silty to Clayey Fine Sand followed by Clayey Sand, Sandy Clay, and Highly Plastic Clay. It should be noted that impermeable Clay was encountered within the first (10) feet of Soil Borings **PB-1, PB-3, PB-5, PB-6, PB-7, PB-10, PB-11,** and **PB-18**. Detailed information on the subsurface conditions at the locations of these Soil Borings is shown in the Soil Profiles provided as **Figures 5A** to **5B** and the Report of Core Borings provided in **APPENDIX A**.

USDA Soil Survey

According to the United States Department of Agriculture (**USDA**) Soil Survey for Leon County, the soils in the project area are primarily *Dothan Loamy Fine Sand, Orangeburg Fine Sandy Loam, Pelham Fine Sand,* and *Yonges Fine Sandy Loam.* Based on the soil borings installed for this study, **EGS concurs** with the information provided in the **USDA** Soil Survey. For detailed information pertaining to the **USDA** Soil Survey, please find **APPENDIX D.**

Groundwater

Groundwater encountered at the time of drilling has been summarized in **TABLE 1**. As can be seen in **TABLE 1**, groundwater was not encountered in most borings. **EGS believes** that the groundwater which was encountered is perched atop an impermeable clay layer. It should be noted that the field investigation was conducted during a period of little to no rainfall. Therefore, the current permanent water table is likely lower than normal. In a normal condition, **EGS believes** that the average permanent groundwater elevation in this area is likely near EL 180 to EL 185 feet.

Based on the soil samples collected and review of general subsurface conditions, the "normal" seasonal high groundwater elevation in the area of the soil borings is highly variable and is dependent on the infiltration characteristics of the subsurface. **EGS believes** the "normal" seasonal high groundwater level is likely in a "perched" condition across most of the project area. Detailed estimations of the estimated "normal" seasonal high groundwater elevations are provided in **TABLE 1**.

Karst Features

EGS reviewed the Tallahassee-Leon County GIS database for karst features in relation to the proposed infiltration areas. No likely karst features were identified at the locations of the proposed infiltration area. Based on the soil borings installed, **EGS does not believe** an "active" karst feature exists below the infiltration areas identified herein.

Permeability Estimates

Estimates of the permeability of each **STRATUM** have been provided in **TABLE 3** and shown in **Figure 5A** thru **5B**. The permeability estimates for each **STRATUM** were determined using the grain-size correlations and reviewing the **USDA** Soil Survey estimates. The permeability values provided are not infiltration rates since they do not include the effects of groundwater mounding, clogging with fines, or include a factor of safety. Copies of the Grain-Size Correlations are provided in **APPENDIX E**.

CLOSURE

The data and results presented in this Report are intended for the use of the **RS&H, Inc.** and **Leon County Department of Public Works** for the infiltration areas, identified herein. This Report is not intended for any other use and will likely not be applicable. The data and recommendations presented in this Report are based on the boring made at the specific location and depth noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, Environmental and Geotechnical Specialists, Inc. requests the opportunity to review the data and make any modifications to the design recommendations which may be appropriate.

Sincerely,

Environmental and Geotechnical Specialists, Inc.
Florida Certificate of Engineering Authorization Number 6222

6-6-11

Myron L. Hayden, Ph.D., P.E.
Principal Geotechnical Engineer
FL P.E. Number 34067

TABLES

TABLE 1
SOIL BORING AND GROUNDWATER DATA
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

BORING NUMBER	BORING DEPTH [1] (FEET)	GROUND ELEVATION [2]	STATIONING (FEET)	OFFSET FROM CONSTRUCTION CENTERLINE (FEET)	MEASURED GROUNDWATER [3]		ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER [4]		STATE PLANE COORDINATES		GLOBAL POSITIONING SATELLITE SYSTEM COORDINATES [5]			
											LATITUDE		LONGITUDE	
					DEPTH (FEET)	ELEVATION (FEET)	DEPTH (FEET)	ELEVATION (FEET)	NORTHING	EASTING	DEG(°)	MIN (')	DEG(°)	MIN (')
SOIL BORING LOCATIONS														
PB-1	25.0	--	13+00[A]	18.0 LEFT	> 25.0	--	2.0 [B]	--	574114.489	2050992.950	30	34.703	84	14.272
PB-2	25.0	214.5	165+50	40.0 LEFT	> 25.0	< 189.5	10.0 [B]	204.5	573744.977	2052257.319	30	34.641	84	14.031
PB-3	25.0	217.5	168+00	42.0 RIGHT	> 25.0	< 191.0	1.0 [B]	216.5	573518.040	2052404.290	30	34.604	84	14.003
PB-4	25.0	219.0	174+00	45.0 LEFT	> 25.0	< 194.0	1.0 [B]	218.0	573162.318	2052881.479	30	34.545	84	13.912
PB-5	25.0	208.5	177+50	47.0 LEFT	11.5 [B]	197.0	6.0 [B]	202.5	572919.555	2053119.025	30	34.505	84	13.867
PB-6	25.0	206.0	179+00	57.0 RIGHT	10.0 [B]	196.0	7.5 [B]	198.5	572735.591	2053150.615	30	34.474	84	13.861
PB-7	25.0	207.0	180+00	49.0 LEFT	> 25.0	< 182.0	7.5 [B]	199.5	572729.772	2053304.836	30	34.473	84	13.832
PB-8	25.0	221.0	183+75	51.0 LEFT	> 25.0	< 196.0	10.0 [B]	201.0	572469.956	2053558.792	30	34.430	84	13.783
PB-9	25.0	216.5	189+00	51.0 LEFT	18.7 [B]	197.8	12.5 [B]	204.0	572087.123	2053930.747	30	34.367	84	13.713
PB-10	25.0	211.5	192+75	38.0 RIGHT	> 25.0	< 186.5	6.0 [B]	205.5	571759.881	2054124.448	30	34.313	84	13.676
PB-11	25.0	213.0	196+00	49.0 LEFT	> 25.0	< 188.0	7.5 [B]	205.5	571581.276	2054419.136	30	34.283	84	13.619
PB-12	25.0	214.0	198+75	68.0 RIGHT	> 25.0	< 189.0	10.0 [B]	204.0	571306.196	2054523.464	30	34.238	84	13.600
PB-13	25.0	213.5	203+00	55.0 LEFT	> 25.0	< 188.5	10.0 [B]	203.5	571079.061	2054902.809	30	34.200	84	13.528
PB-14	25.0	215.0	206+00	34.0 RIGHT	> 25.0	< 190.0	7.5 [B]	207.5	570788.027	2055027.197	30	34.152	84	13.504
PB-15	25.0	215.0	208+00	41.0 LEFT	> 25.0	< 190.0	> 25.0	< 190.0	570676.807	2055209.063	30	34.134	84	13.470
PB-16	25.0	224.0	214+00	32.0 RIGHT	> 25.0	< 199.0	15.0 [B]	209.0	570161.817	2055520.003	30	34.049	84	13.411
PB-17	25.0	222.5	220+50	47.0 LEFT	> 25.0	< 197.5	15.0 [B]	207.5	569694.852	2055985.055	30	33.972	84	13.322
PB-18	25.0	234.0	229+00	40.0 LEFT	> 25.0	< 209.0	1.0 [B]	233.0	569027.257	2056504.117	30	33.861	84	13.223

NOTES:
1. DEPTHS ARE BELOW EXISTING GROUND SURFACE
2. ELEVATIONS DETERMINED FROM PLANS PROVIDED BY REYNOLDS, SMITH, AND HILLS, INC.
3. 24 - HOUR GROUNDWATER MEASUREMENTS TAKEN IN THE FIELD
4. "NORMAL" SEASONAL HIGH GROUNDWATER ESTIMATED
5. GPS COORDINATES DETERMINED USING A TRIMBLE GEOEXPLORER XH HANDHELD UNIT
6. -- MEANS NOT DETERMINED.

A. STATION CORRESPONDS TO REYNOLDS DRIVE.
B. LIKELY IN A PERCHED CONDITION.

TABLE 2
USDA SOIL SURVEY DATA
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

BORING NUMBER(S)	MATERIAL REFERENCE [1]	DEPTH (INCHES)	MATERIAL DESCRIPTION	MATERIAL CLASSIFICATION		DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
				UNIFIED	AASHTO	
PB-3, PB-4, PB-8, PB-9, PB-10, PB-13, PB-14, PB-15, PB-17, PB-18	10	0 - 5	LOAMY FINE SAND	SM	A-2	3.5
		5 - 13	LOAMY FINE SAND	SM	A-2	
		13 - 46	SANDY CLAY LOAM, SANDY LOAM	SC-SM, SM, SC	A-6, A-2, A-4	
		46 - 80	SANDY CLAY LOAM, SANDY CLAY	SC-SM, CL, SC	A-4, A-6, A-7, A-2	
PB-1, PB-6, PB-7	11	0 - 6	LOAMY FINE SAND	SM	A-2	3.5
		6 - 10	FINE SANDY LOAM, LOAMY FINE SAND	SM	A-2	
		10 - 64	SANDY CLAY LOAM, SANDY LOAM	SM, SC, SC-SM	A-4, A-6, A-2	
		64 - 80	SANDY CLAY LOAM, SANDY CLAY	CL, SC, SC-SM	A-4, A-6, A-7, A-2	
PB-11, PB-12	33	0 - 5	FINE SANDY LOAM	SM	A-2	--
		5 - 10	FINE SANDY LOAM	SM	A-2	
		10 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SC, CL	A-4, A-6	
PB-16	34	0 - 6	FINE SANDY LOAM	SM	A-2	--
		6 - 18	FINE SANDY LOAM	SM	A-2	
		18 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SC, CL	A-4, A-6	
PB-5	39	0 - 5	FINE SAND	SM	A-2	0.0
		5 - 26	FINE SAND	SM	A-2	
		26 - 80	SANDY CLAY LOAM, SANDY LOAM, FINE SANDY LOAM	SC, SC-SM, SM	A-2, A-4, A-6	
PB-2	52	0 - 5	FINE SANDY LOAM	SM, ML	A-4	0.0
		5 - 9	FINE SAND	SM	A-2-4	
		9 - 71	SANDY CLAY LOAM	CL-ML, SC, SC-SM, CL	A-7, A-4, A-6	
		71 - 80	SANDY CLAY LOAM, FINE SANDY LOAM	SM, CL, ML, SC	A-6, A-4	

NOTES: 1. BASED ON THE USDA SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA

2. SEE **APPENDIX D** FOR DETAILED USDA SOIL SURVEY DATA

TABLE 3
SOIL PERMEABILITY ESTIMATES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

STRATA NUMBER	MATERIAL CLASSIFICATION			SOIL PERMEABILITY VALUES		
	UNIFIED	AASHTO	USDA	LABORATORY GRAIN-SIZE ESTIMATE [1] (IN/HR)	USDA SOIL SURVEY VALUES [2] (IN/HR)	AVERAGE PERMEABILITY VALUE [3] (IN/HR)
1	SM	A-2-4	LOAMY SAND	0.7 - 2.1	2.0 - 6.0	**1.0**
2	SC	A-2-6	SANDY LOAM	0.4 - 0.7	0.5 - 2.0	**0.5**
3	SC	A-6	LOAM	0.1 - 0.2	0.2 - 0.5	**0.1**
4	CL	A-6	SANDY CLAY	< 0.01	--	**< 0.01**
5	CL/CH	A-7-6	PLASTIC CLAY	< 0.01	--	**< 0.01**

NOTES: 1. ESTIMATED FROM GRAIN-SIZE DISTRIBUTION CURVES.

2. REPORTED IN USDA SOIL SURVEY FOR LEON COUNTY.

3. RECOMMENDED PERMEABILITY VALUES SHOWN **ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES OR FACTOR OF SAFETY.**

4. - - MEANS NOT INCLUDED IN USDA SOIL SURVEY.

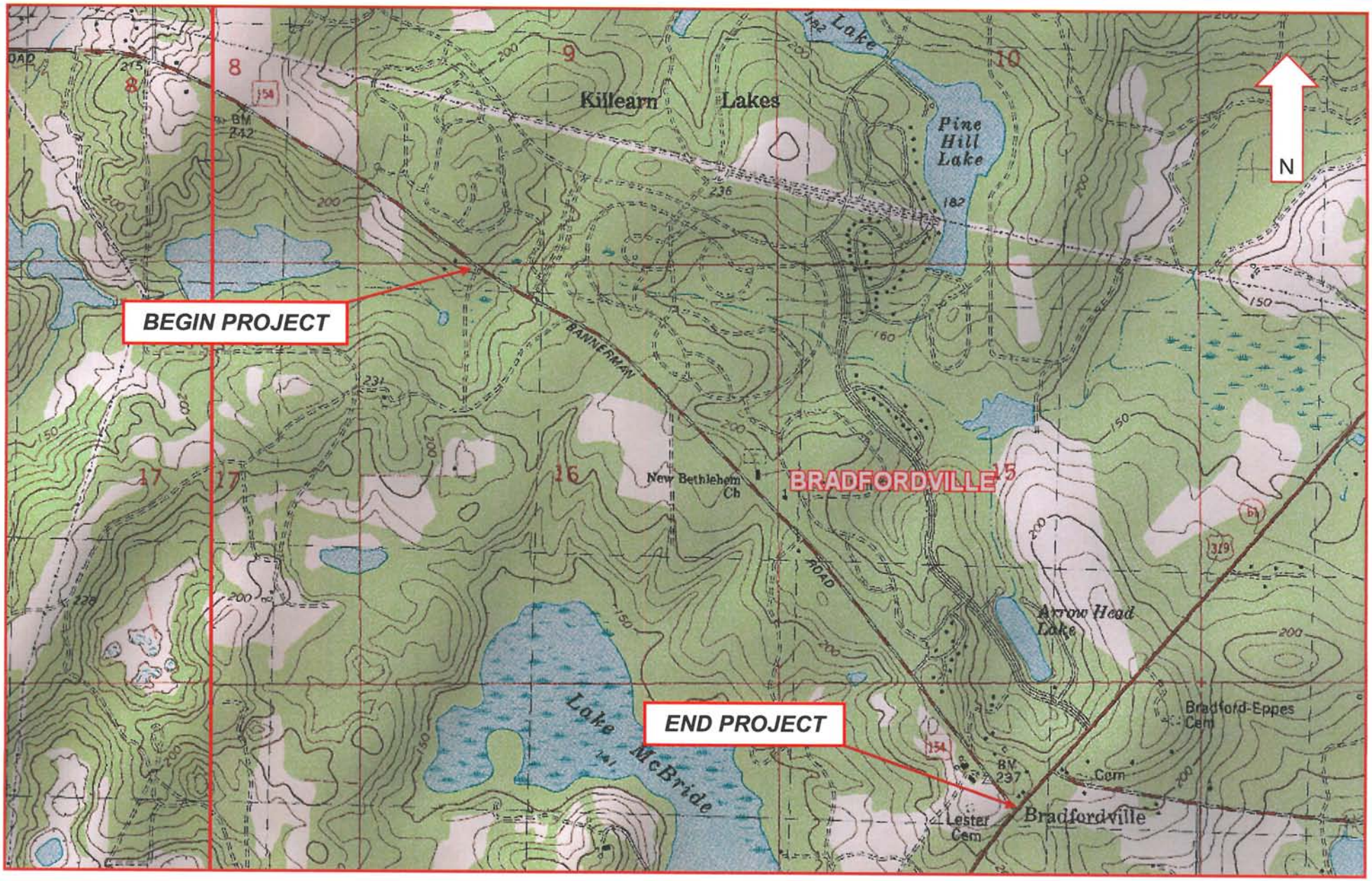
FIGURES

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH & HILLS, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road | Tallahassee, Florida 32308
Office #: (850) 386-1253 | Fax #: (850) 385-8050

TITLE:
SITE LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: JUNE 2011	FIGURE NO.: 1



DRAWN: D. MILLS	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: REYNOLDS, SMITH & HILLS, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists

3154 ELIZA ROAD | TALLAHASSEE, FLORIDA 32308
OFFICE #: (850) 386-1253 | FAX #: (850) 385-8050

TITLE:
USGS TOPOGRAPHIC SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: JUNE 2011	FIGURE NO.: 2

FIGURE 3A: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING NORTHWEST)

FIGURE 3B: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING SOUTHEAST)

FIGURE 3C: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING NORTHWEST)

FIGURE 3D: VIEW OF EXISTING ROADWAY CORRIDOR
(FACING SOUTHEAST)

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DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 FIGURE NO.: 4A

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: R&SH, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011	FIGURE NO.: 4B

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4C

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4D

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.
ENGINEER: M. HAYDEN, P.E.	
CLIENT: R&SH, INC.	
PROJ. NO.: 23-59-10-01	SCALE:

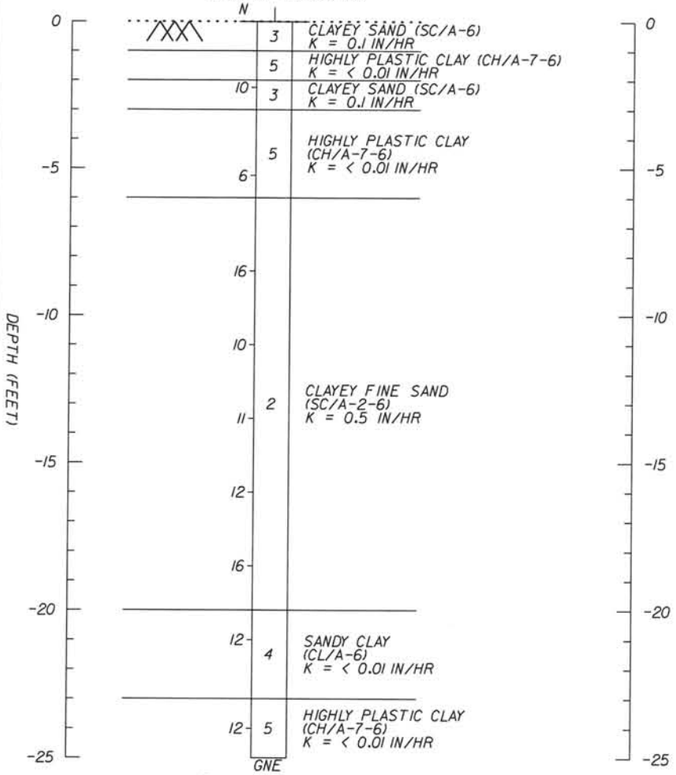
EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
SOIL BORING LOCATION MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011	FIGURE NO.: 4E

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: SOIL BORING LOCATION MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: 4F

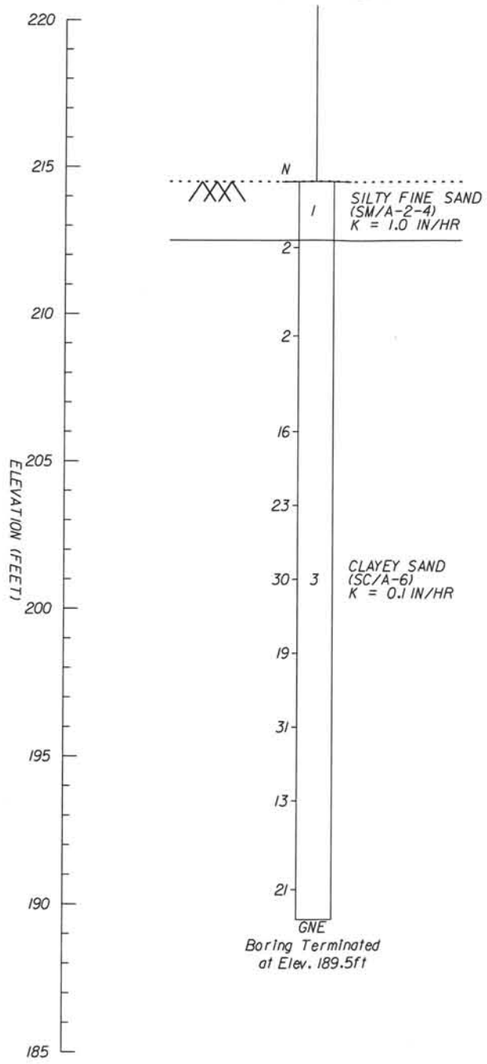
BOR # PB-1
NORTHING 574114.489
EASTING 2050992.95
ELEV. *
DATE 5/17/2011
DRILLER W. DUNLAP
HAMMER AUTOMATIC



Boring Terminated
at Depth 25ft

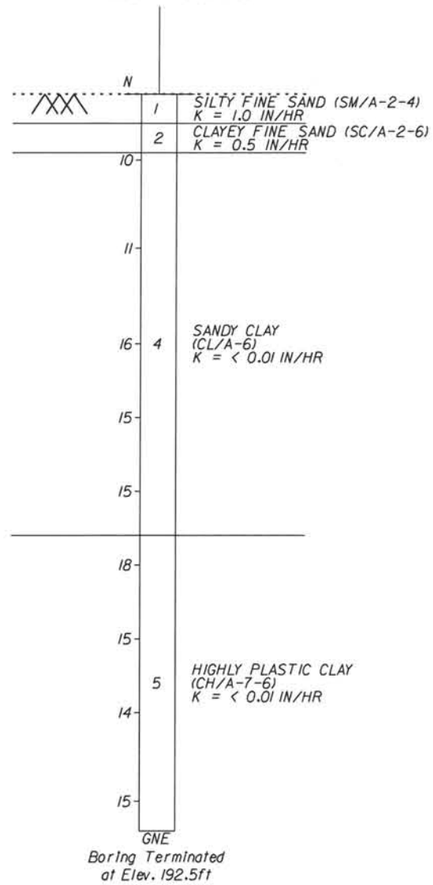
* BORING WAS INSTALLED OUTSIDE OF SURVEY BOUNDARY. EXISTING GROUND SURFACE ELEVATION WAS NOT KNOWN.

BOR # PB-2
NORTHING 573744.977
EASTING 2052257.319
ELEV. 214.5
DATE 5/12/2011
DRILLER J. NELSON
HAMMER AUTOMATIC



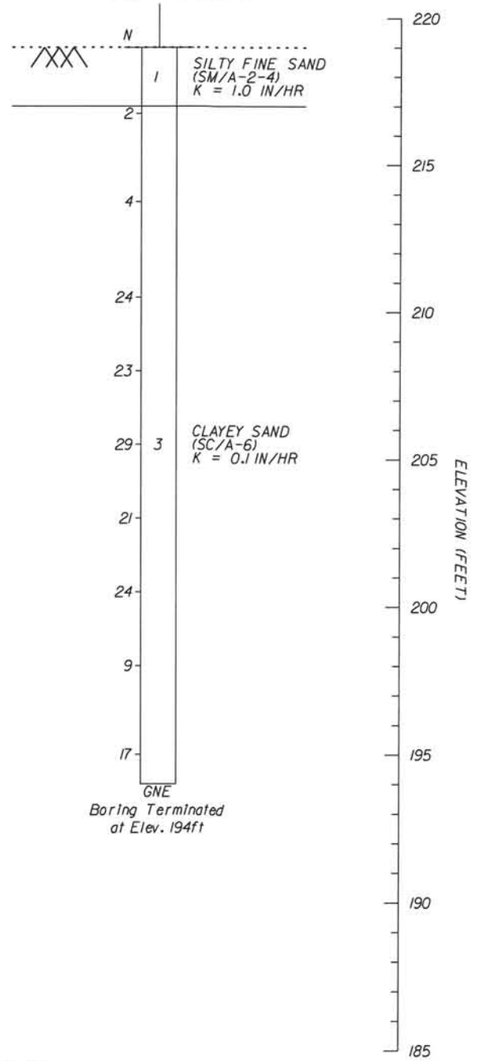
Boring Terminated
at Elev. 189.5ft

BOR # PB-3
NORTHING 573518.04
EASTING 2052404.29
ELEV. 217.5
DATE 5/17/2011
DRILLER W. DUNLAP
HAMMER AUTOMATIC



Boring Terminated
at Elev. 192.5ft

BOR # PB-4
NORTHING 573162.318
EASTING 2052881.479
ELEV. 219.0
DATE 5/12/2011
DRILLER J. NELSON
HAMMER AUTOMATIC



Boring Terminated
at Elev. 194ft

LEGEND

1. GNE - GROUNDWATER NOT ENCOUNTERED.
2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

NOTES

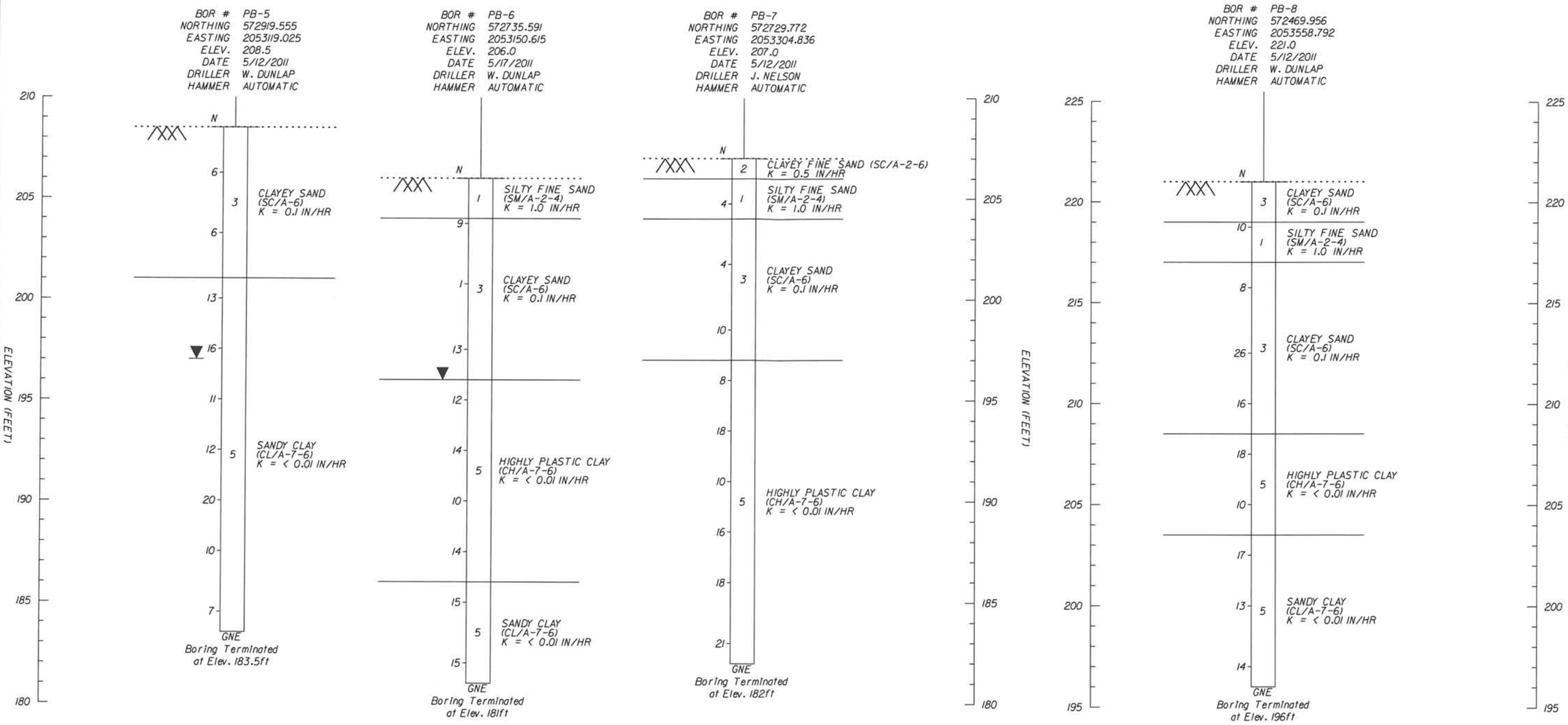
1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
3. PERMEABILITY VALUES SHOWN ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES, OR FACTOR OF SAFETY.

PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5A



NOTES

1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
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LEGEND

1. GNE - GROUNDWATER NOT ENCOUNTERED.
2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
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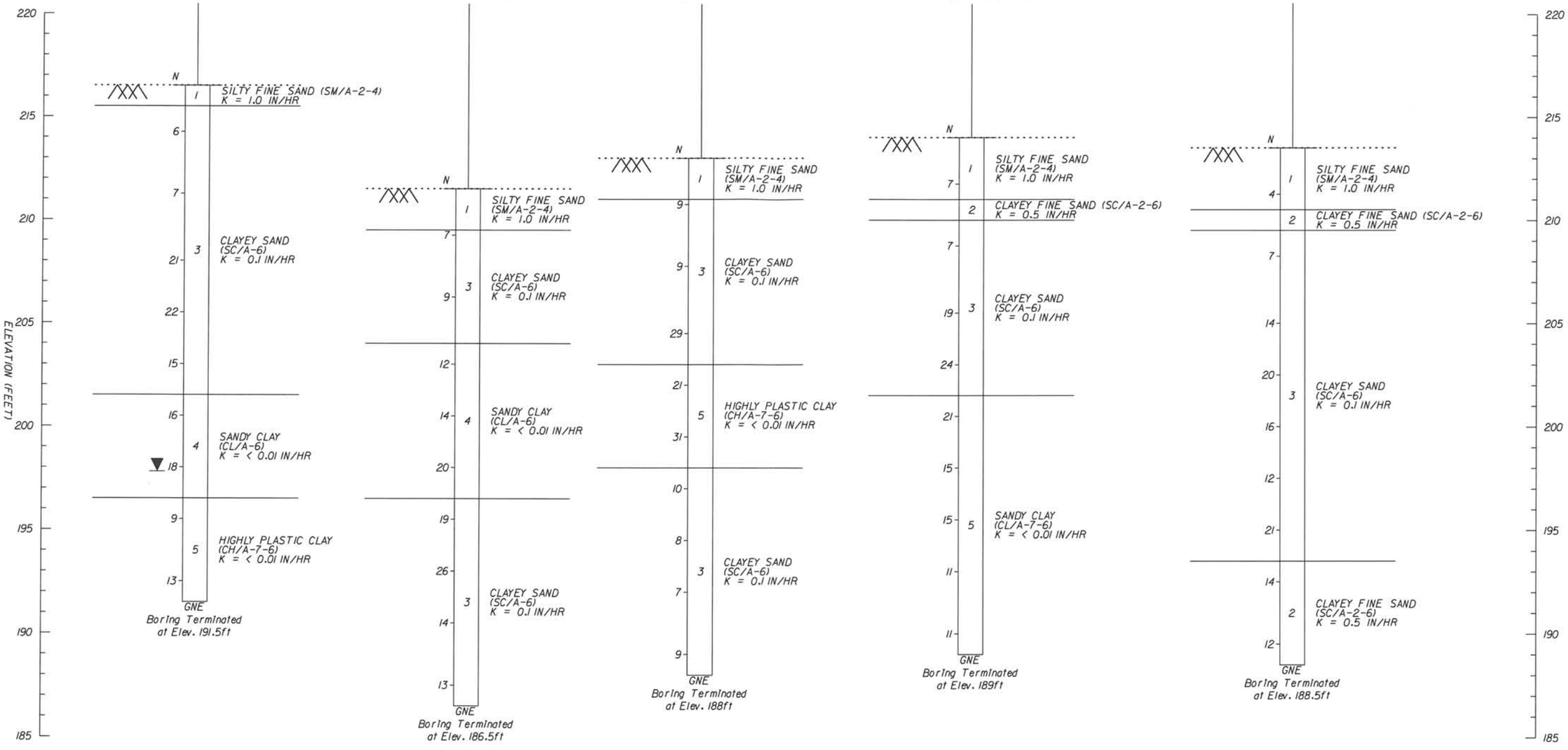
SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5B



NOTES

1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
3. PERMEABILITY VALUES SHOWN ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES, OR FACTOR OF SAFETY.

LEGEND

1. GNE - GROUNDWATER NOT ENCOUNTERED.
2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
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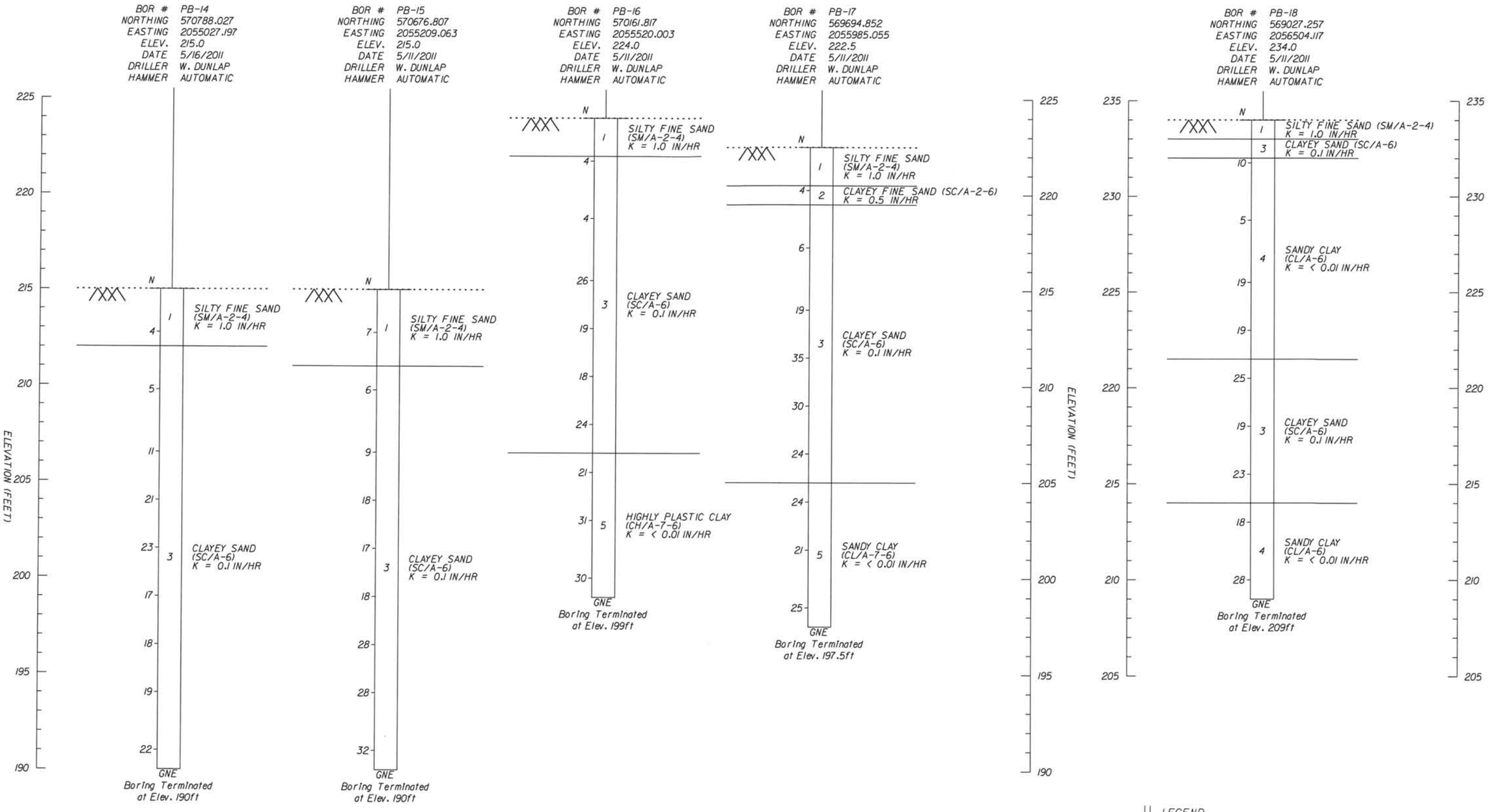
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5C



NOTES

1. SEE CLASSIFICATION DATA SHEETS AND SOIL BORING LOGS FOR MATERIAL PROPERTIES.
2. NUMBERS TO LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION.
3. PERMEABILITY VALUES SHOWN ARE NOT INFILTRATION VALUES SINCE THEY DO NOT INCLUDE THE EFFECTS OF GROUNDWATER MOUNDING, CLOGGING WITH FINES, OR FACTOR OF SAFETY.

LEGEND

1. GNE - GROUNDWATER NOT ENCOUNTERED.
2. ▼ - MEASURED WATER LEVEL 24-HOURS AFTER DRILLING.
3. K - ESTIMATED PERMEABILITY VALUE (INCH/HOUR).

PREPARED BY:	M. MONTEITH, E.I.
REVISED:	M. MONTEITH, E.I.
CHECKED:	M. HAYDEN, P.E.
ENGINEER:	M. HAYDEN, P.E.
SR. ENGINEER:	M. HAYDEN, P.E.

EGS
Environmental & Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office : (850) 386-1253 Fax : (850) 385-8050

SOIL PROFILES
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

SCALE:	DATE: JUNE 2011
PROJ. NO.: 23-59-10-01	FIGURE NO.: 5D

APPENDIX A

SOIL SURVEY

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REPORT OF TESTS

		SIEVE ANALYSIS RESULTS % PASSING						PLASTICITY			CLASSIFICATION		DESCRIPTION	
STRATUM NO.	NO. OF TESTS	4 MESH	10 MESH	20 MESH	40 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	UNIFIED GROUP	AASHTO GROUP	COLOR	MATERIAL
1	10	100	100	93-100	75-98	22-69	21-33	1	17	5	SM	A-2-4	BROWN	SILTY FINE SAND
2	5	100	99-100	79-100	56-100	33-92	26-33	4	27-38	11-17	SC	A-2-6	BROWN AND GRAY	CLAYEY FINE SAND
3	47	100	100	98-100	87-100	41-84	36-49	43	19-40	11-24	SC	A-6	BROWN AND GRAY	CLAYEY SAND
4	8	100	100	99-100	97-100	66-88	51-63	8	26-39	11-23	CL	A-6	BROWN AND GRAY	SANDY CLAY
5	23	100	100	97-100	95-100	56-99	51-96	21	41-89	11-60	CL/CH	A-7-6	BROWN, GRAY, AND ORANGE	SANDY CLAY AND HIGHLY PLASTIC CLAY

STANDARD PENETRATION NOTES

Granular Materials Relative Density	SPT (blows/12 in.)	Silts and Clays Consistency	SPT (blows/12 in.)
Very Loose	Less than 3	Very Soft	Less than 1
Loose	3 – 8	Soft	1 – 3
Medium or Compact	8 – 24	Firm	3 – 6
Dense	24 – 40	Stiff	6 – 12
Very Dense	Greater than 40	Very Stiff	12 – 24
		Hard	Greater than 24

SPLIT–SPOON:

INSIDE DIAMETER:	1⅜ in.
OUTSIDE DIAMETER:	2.0 in.
AVG. HAMMER DROP:	30.0 in.
HAMMER WEIGHT:	140 lbs.
HAMMER TYPE:	Automatic

NOTES

1. Numbers left of borings indicate standard penetration test (SPT) N–values for 12 inch penetration (Unless otherwise noted).
2. Numbers in center of borings indicate the stratum number.
3. Soil descriptions and standard penetration values shown are for the soil boring only and may not apply to any other location. Extrapolation of the soil boring data to other locations is the sole responsibility of the person performing the extrapolation.
4. Strata boundaries are approximate.
5. Water Levels shown represent the water depths encountered. Fluctuations in water depths should be expected.

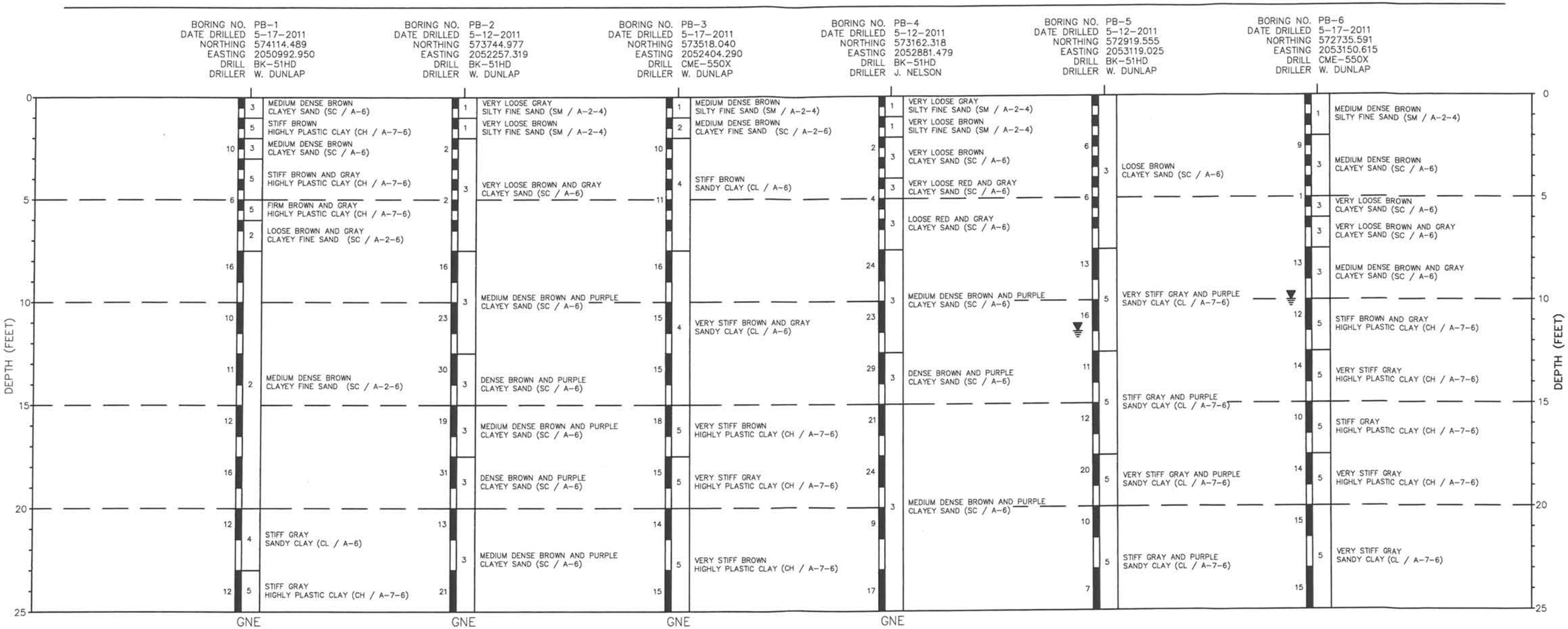
LEGEND

▼ WATER LEVEL AFTER 24–HOURS

GNE GROUNDWATER NOT ENCOUNTERED

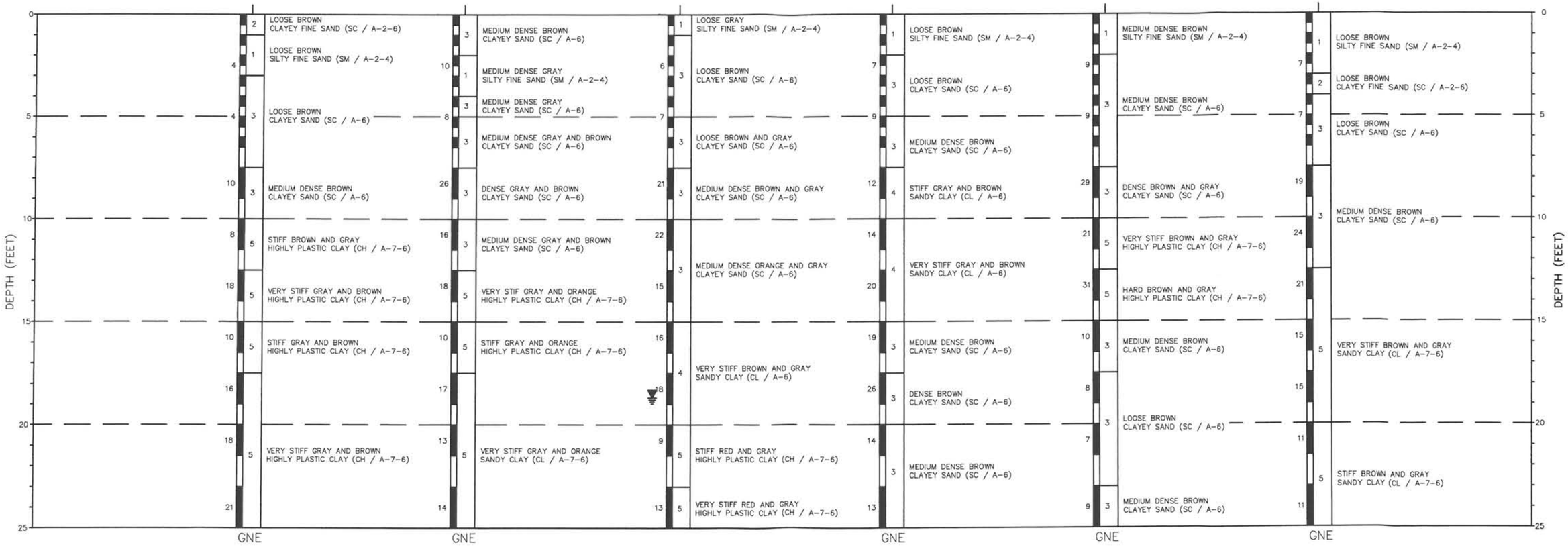
REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	SOIL SURVEY REPORT OF TESTS	SHEET NO.
	M. HAYDEN, P.E.	EGS 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION		
	P.E. NO.: 34067	Cert. of Auth.: 6222	LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



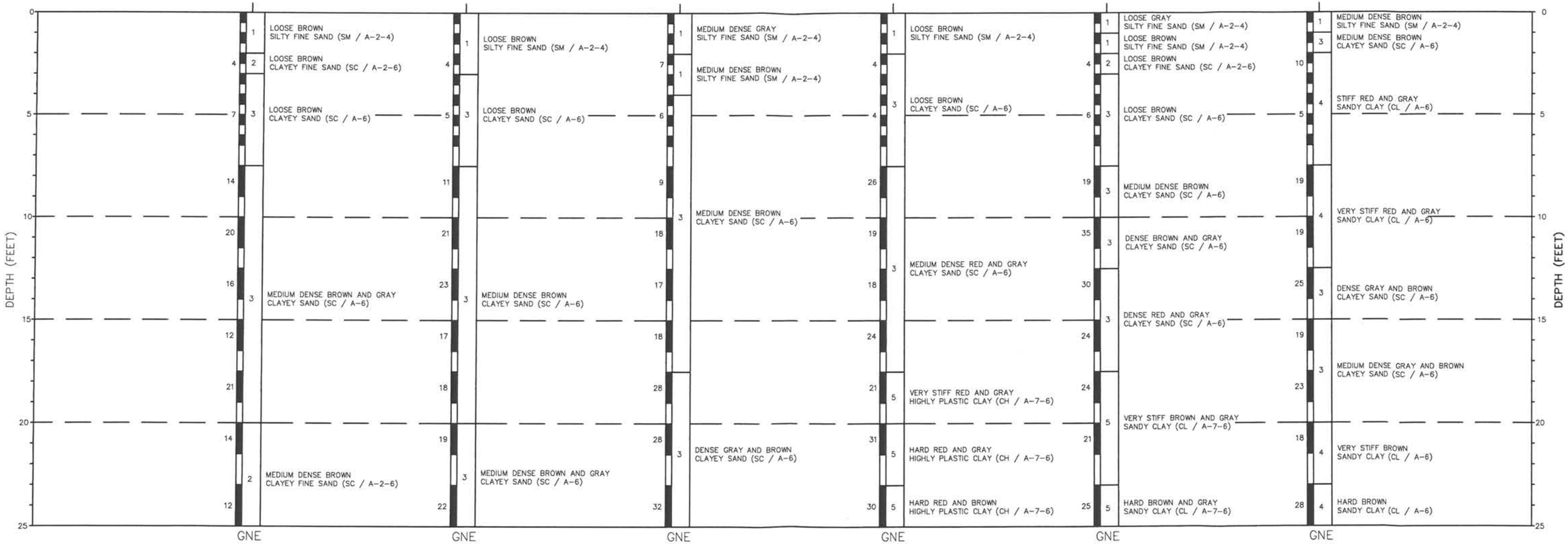
REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(1 OF 3)*	SHEET NO.
	M. HAYDEN, P.E.	EGS Cert. of Auth.: 6222	PROJECT LOCATION		
	P.E. NO.: 34067	3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(2 OF 3)*	SHEET NO.
						M. HAYDEN, P.E. P.E. NO.: 34067	EGS Cert. of Auth.: 6222 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION LEON COUNTY, FLORIDA		

BANNERMAN ROAD CORRIDOR



REVISIONS	SEAL:	Environmental & Geotechnical Specialists, Inc.	BANNERMAN ROAD CORRIDOR STUDY INFILTRATION INVESTIGATION	*SOIL SURVEY* *REPORT OF SOIL BORINGS* *(3 OF 3)*	SHEET NO.
	M. HAYDEN, P.E. P.E. NO.: 34067	EGS Cert. of Auth.: 6222 3154 ELIZA ROAD TALLAHASSEE, FLORIDA 32308 OFFICE: (850) 386-1253 FAX: (850) 385-8050	PROJECT LOCATION LEON COUNTY, FLORIDA		

APPENDIX B

SOIL BORING LOGS

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-1
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: >25.0' **AFTER 24 HOURS:** >25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 574114.489
EASTING: 2050992.950
ELEVATION (FEET):
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		
				STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6	-200%=67 LL=55 PI=28	26		
					SC A-6	-200%=39 LL=34 PI=21	14	10	
4				MEDIUM DENSE BROWN CLAYEY SAND	CH A-7-6		43		
							51		
				STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=82 LL=74 PI=44	55	6	
2				FIRM BROWN AND GRAY HIGHLY PLASTIC CLAY	SC A-2-6		23		
	8			LOOSE BROWN CLAYEY FINE SAND		-200%=30 LL=38 PI=17	18	16	
							17	10	
	12						18		
4				MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=33 LL=27 PI=11	16	11	
							14	12	
	16					-200%=27 LL=30 PI=16	24	16	
6	20			STIFF GRAY SANDY CLAY	CL A-6		24	12	
	24			STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=58 LL=60 PI=37	33	12	
8	28								

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-2
DRILLER: J.NELSON
DEPTH TO WATER - INITIAL: ▽ >25.0' **AFTER 24 HOURS:** ▼ >25.0' **CAVING** ⊂ NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573744.977
EASTING: 2052257.319
ELEVATION (FEET): 214.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			VERY LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=25	9				
							8				
				VERY LOOSE BROWN SILTY FINE SAND			17		2		
							16				
	4			VERY LOOSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=36 LL=25 PI=11	17				
							17		2		
2							17				
	8			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=42 LL=36 PI=20	17		16		
							15		23		
4	12			DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		17		30		
	16			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=49 LL=35 PI=14	19		19		
				DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		17		31		
6	20			MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=47 LL=32 PI=18	14		13		
	24						16		21		
8	28										

Wc (%) axis: 10 20 30 40 60
N-Value* axis: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-3
DRILLER: W.DUNLAP
DEPTH TO WATER - INITIAL: ▽ >25.0' **AFTER 24 HOURS:** ▼ >25.0' **CAVING** C NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573518.040
EASTING: 2052404.290
ELEVATION (FEET): 217.5
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		3			
					SC A-2-6		3			
				MEDIUM DENSE BROWN CLAYEY FINE SAND		-200%=51 LL=32 PI=11	10	10		
							14			
	4			STIFF BROWN SANDY CLAY	CL A-6		16			
						-200%=53 LL=34 PI=18	18	11		
2							14			
	8			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-6	-200%=51 LL=32 PI=15	25	16		
							19	15		
	12									
4							18	15		
	16			VERY STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6		25	18		
				VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=89	28	15		
6	20			VERY STIFF BROWN HIGHLY PLASTIC CLAY	CH A-7-6		48	14		
	24					-200%=74 LL=51 PI=30	62	15		
8	28									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-4
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 573162.318
EASTING: 2052881.479
ELEVATION (FEET): 219.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0	VERY LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=28	6	6			
					8	8			
		VERY LOOSE BROWN SILTY FINE SAND	SC A-6	-200%=47	20	20	2	2	
	4	VERY LOOSE BROWN CLAYEY SAND			22	22			
					20	20			
		VERY LOOSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=42 LL=33 PI=17	15	15	4	4	
2					14	14			
	8	LOOSE RED AND GRAY CLAYEY SAND							
		MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=36 LL=27 PI=15	12	12	24	24	
					13	13	23	23	
	12	DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6		12	12	29	29	
4									
		MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND	SC A-6	-200%=42 LL=35 PI=18	15	15	21	21	
	16				18	18	24	24	
6									
	20				20	20	9	9	
	24				20	20	17	17	
8	28								

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-5
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 11.5' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572919.555
EASTING: 2053119.025
ELEVATION (FEET): 208.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN CLAYEY SAND WITH WOOD	SC A-6	-200%=36	12, 30, 13	6		
	4						15, 14			
2						-200%=37 LL=32 PI=14	15, 19	6		
	8			VERY STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=58 LL=45 PI=24	23	13		
	12						27	16		
4				STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=51 LL=41 PI=18	25	11		
	16						27	12		
6	20			VERY STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6	-200%=51 LL=48 PI=27	27	20		
				STIFF GRAY AND PURPLE SANDY CLAY	CL A-7-6		27	10		
	24						36	7		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-6
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 10.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572735.591
EASTING: 2053150.615
ELEVATION (FEET): 206.0
DATE: 5/17/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		6 4			
				MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=38	13 16 18	9		
	4			VERY LOOSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=21 PI=11	19 20	1		
2				VERY LOOSE BROWN AND GRAY CLAYEY SAND						
	8			MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		15	13		
				STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=91 LL=75 PI=46	55	12		
4	12			VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6		55	14		
	16			STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=82 LL=70 PI=43	46	10		
				VERY STIFF GRAY HIGHLY PLASTIC CLAY	CH A-7-6		41	14		
6	20			VERY STIFF GRAY SANDY CLAY	CL A-7-6	-200%=76 LL=45 PI=21	32 29	15 15		
	24									
8	28									

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-7
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572729.772
EASTING: 2053304.836
ELEVATION (FEET): 207.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=21	8, 4	
		LOOSE BROWN SILTY FINE SAND	SM A-2-4		5	4
	4	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=30 PI=14	13, 14, 16, 18	4
2	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		22	10
	12	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=92 LL=80 PI=53	37	8
4		VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		33	18
	16	STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		36	10
6	20	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6	-200%=84 LL=51 PI=30	32, 30	16, 18
	24			-200%=82	32	21
8	28					

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-8
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572469.956
EASTING: 2053558.792
ELEVATION (FEET): 221.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=27 PI=11	2				
							10				
				MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4		6		10		
	4						4				
				MEDIUM DENSE GRAY CLAYEY SAND	SC A-6		10				
						-200%=41 LL=24 PI=11	14		8		
2				MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		14				
	8			DENSE GRAY AND BROWN CLAYEY SAND	SC A-6	-200%=40 LL=29 PI=16	14		26		
				MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		14		16		
	12										
4				VERY STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY	CH A-7-6	-200%=96 LL=89 PI=60	50		18		
	16			STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY	CH A-7-6		52		10		
				VERY STIFF GRAY AND ORANGE SANDY CLAY	CL A-7-6	-200%=51 LL=41 PI=23	24		17		
6	20						22		13		
	24					-200%=62 LL=41 PI=11	23		14		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-9
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** 18.7' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 572087.123
EASTING: 2053930.747
ELEVATION (FEET): 216.5
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=37 LL=19 PI=11	2	
					10	
		LOOSE BROWN CLAYEY SAND	SC A-6		18	6
					18	
	4				19	
2		LOOSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=49	16	7
					15	
	8	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=44 LL=32 PI=17	15	21
4		MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND	SC A-6	-200%=49 LL=33 PI=18	14	22
	12				16	15
	16	VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-6	-200%=54 LL=37 PI=18	36	16
6					25	18
	20	STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		30	9
	24	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=78 LL=55 PI=35	31	13
8	28					

Wc (%) scale: 10, 20, 30, 40, 60
N-Value* scale: 10, 20, 30, 40, 60, 80

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-10
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: >25.0' **AFTER 24 HOURS:** >25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571759.881
EASTING: 2054124.448
ELEVATION (FEET): 211.5
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0	LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=21	10 3	10 20 30 40 60		10 20 30 40 60 80	
	4	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41	9 11 16		7		
2	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=40 LL=33 PI=17	21 16		9		
		STIFF GRAY AND BROWN SANDY CLAY	CL A-6		18		12		
4	12	VERY STIFF GRAY AND BROWN SANDY CLAY	CL A-6	-200%=55 LL=28 PI=11	20 23		14 20		
	16	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		18		19		
6	20	DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=35 PI=17	21		26		
		MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=24 PI=14	21		14 13		
8	24								
	28								

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-11
DRILLER: J. NELSON
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571581.276
EASTING: 2054419.136
ELEVATION (FEET): 213.0
DATE: 5/12/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4	-200%=33 LL=17 PI=5	4, 8	
		MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=48 LL=31 PI=15	12, 15, 19, 16, 14	9, 9
2	8	DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		13	29
	12	VERY STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=89 LL=70 PI=41	30	21
4		HARD BROWN AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		31	31
	16	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=25 PI=11	16	10
6	20	LOOSE BROWN CLAYEY SAND	SC A-6	-200%=38 LL=25 PI=11	19, 21	8, 7
	24	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6		25	9
8	28					

Wc (%): 10, 20, 30, 40, 60
N-Value*: 10, 20, 30, 40, 60, 80
WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-12
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571306.196
EASTING: 2054523.464
ELEVATION (FEET): 214.0
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*
0	0	LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=26	4	
					5	
					11	7
	4	LOOSE BROWN CLAYEY FINE SAND	SC A-2-6		15	
					17	
2		LOOSE BROWN CLAYEY SAND	SC A-6	-200%=47 LL=31 PI=11	16	7
					15	
	8	MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=36 LL=26 PI=11	13	19
4					10	24
	12	VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=64 LL=41 PI=18	19	21
					26	15
	16				23	15
6	20	STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=66 LL=41 PI=22	20	11
	24				22	11
8	28					

N-Value* (10, 20, 30, 40, 60, 80)

WELL SCHEMATIC

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-13
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 571079.061
EASTING: 2054902.809
ELEVATION (FEET): 213.5
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4		7				
							3				
				LOOSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=33	8		4		
	4						16				
				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=45 LL=36 PI=19	16				
2							7		7		
	8						17				
				MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6	-200%=42 LL=39 PI=20	16		14		
	12						19		20		
4							18		16		
	16					-200%=49 LL=33 PI=15	21		12		
							20		21		
6	20			MEDIUM DENSE BROWN CLAYEY FINE SAND	SC A-2-6	-200%=26 LL=34 PI=11	21		14		
	24						10		12		
8	28										

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-14
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570788.027
EASTING: 2055027.197
ELEVATION (FEET): 215.0
DATE: 5/16/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND	SM A-2-4	-200%=23	7 4 7		4		
	4			LOOSE BROWN CLAYEY SAND	SC A-6	-200%=41 LL=28 PI=13	10 16 17 16		5		
2	8			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=40 PI=24	18		11		
	12						18		21		
4						-200%=47 LL=37 PI=20	20		23		
	16						16		17		
							17		18		
6	20			MEDIUM DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		14		19		
	24					-200%=39 LL=29 PI=14	14		22		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-15
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570676.807
EASTING: 2055209.063
ELEVATION (FEET): 215.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	SM A-2-4	-200%=21	9	10 20 30 40 60		10 20 30 40 60 80	
							6				
				MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		7		7		
	4						11				
				MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=37 LL=25 PI=15	14				
2							15		6		
							14				
	8					-200%=41 LL=33 PI=16	16		9		
							15		18		
	12										
4						-200%=36 LL=20 PI=11	18		17		
	16						28		18		
				DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		23		28		
6	20						16		28		
	24					-200%=45 LL=30 PI=11	17		32		
8											
	28										

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EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-16
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 570161.817
EASTING: 2055520.003
ELEVATION (FEET): 224.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE BROWN SILTY FINE SAND WITH LIMEROCK	SM A-2-4	-200%=21	7				
							9				
				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=30 PI=12	13		4		
	4						16				
							19		4		
2							18				
	8						16				
				MEDIUM DENSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=36 LL=26 PI=13	11		26		
							12		19		
4	12						13		18		
	16						15		24		
				VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6		18		21		
6	20			HARD RED AND GRAY HIGHLY PLASTIC CLAY	CH A-7-6	-200%=71 LL=54 PI=29	25		31		
	24			HARD RED AND BROWN HIGHLY PLASTIC CLAY	CH A-7-6		21		30		
8	28										

Wc (%): 10 20 30 40 60
N-Value*: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-17
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 569694.852
EASTING: 2055985.055
ELEVATION (FEET): 222.5
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0			LOOSE GRAY SILTY FINE SAND	SM A-2-4	-200%=23	7, 6			
				LOOSE BROWN SILTY FINE SAND	SC A-2-6		10	4		
	4			LOOSE BROWN CLAYEY FINE SAND			12, 16			
2				LOOSE BROWN CLAYEY SAND	SC A-6	-200%=44 LL=30 PI=12	17, 17	6		
	8			MEDIUM DENSE BROWN CLAYEY SAND	SC A-6	-200%=49 LL=35 PI=12	18	19		
				DENSE BROWN AND GRAY CLAYEY SAND	SC A-6		15	35		
4	12			DENSE RED AND GRAY CLAYEY SAND	SC A-6	-200%=47 LL=33 PI=18	17, 14	30, 24		
6	20			VERY STIFF BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=51 LL=43 PI=24	18, 27	24, 21		
	24			HARD BROWN AND GRAY SANDY CLAY	CL A-7-6	-200%=72 LL=45 PI=21	34	25		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

EGS
ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

PROJECT: BANNERMAN ROAD CORRIDOR STUDY
CLIENT: RS&H, INC.
PROJECT NO.: 23-59-10-01
PROJECT LOCATION: LEON COUNTY, FLORIDA
BORING NO.: PB-18
DRILLER: W. DUNLAP
DEPTH TO WATER - INITIAL: > 25.0' **AFTER 24 HOURS:** > 25.0' **CAVING** NONE

HAMMER TYPE: AUTOMATIC
NORTHING: 569027.257
EASTING: 2056504.117
ELEVATION (FEET): 234.0
DATE: 5/11/2011
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE SYMBOL	DESCRIPTION	USCS/ AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N*	N-Value*	WELL SCHEMATIC
0	0		MEDIUM DENSE BROWN SILTY FINE SAND	SM A-2-4		6				
				SC A-6	-200%=36 LL=20 PI=11	11				
			MEDIUM DENSE BROWN CLAYEY SAND			18		10		
						17				
	4		STIFF RED AND GRAY SANDY CLAY	CL A-6	-200%=54 LL=34 PI=14	15		5		
2						17				
						14				
	8		VERY STIFF RED AND GRAY SANDY CLAY	CL A-6	-200%=51 LL=39 PI=23	20		19		
						14		19		
4	12		DENSE GRAY AND BROWN CLAYEY SAND	SC A-6	-200%=36 LL=31 PI=15	14		25		
	16		MEDIUM DENSE GRAY AND BROWN CLAYEY SAND	SC A-6		18		19		
						13		23		
6	20		VERY STIFF BROWN SANDY CLAY	CL A-6		27		18		
	24		HARD BROWN SANDY CLAY	CL A-6	-200%=63 LL=26 PI=11	17		28		
8	28									

Wc (%) axis: 10, 20, 30, 40, 60
N-Value* axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

APPENDIX C

SOIL CLASSIFICATION DATA

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-1

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
1.0-1.5	26	100	100	99	97	93	83	67	55	28			CH	A-7-6	5	STIFF BROWN HIGHLY PLASTIC CLAY
2.0-2.5	14	100	100	98	87	45	41	39	34	21		10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	43												CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
4.0-4.5	51												CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
5.0-5.5	55	100	100	100	98	87	85	82	74	44		6	CH	A-7-6	5	FIRM BROWN AND GRAY HIGHLY PLASTIC CLAY
6.0-6.5	23												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
7.5-9.0	18	100	99	79	56	39	33	30	38	17		16	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
10.0-11.5	17											10	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
12.5-13.0	18												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
13.0-14.0	16	100	100	88	77	72	48	33	27	11		11	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-1

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
15.0-16.5	14											12	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
17.5-19.0	24	100	100	100	100	99	92	27	30	16		16	SC	A-2-6	2	MEDIUM DENSE GRAY CLAYEY FINE SAND
20.0-21.5	24											12	CL	A-6	4	STIFF GRAY SANDY CLAY
23.0-25.0	33	100	100	100	99	99	85	58	60	37		12	CH	A-7-6	5	STIFF GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-2

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	9												SM	A-2-4	1	VERY LOOSE GRAY SILTY FINE SAND
1.0-1.5	8	100	100	100	98	89	65	25					SM	A-2-4	1	VERY LOOSE BROWN SILTY FINE SAND
2.0-2.5	17											2	SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
3.0-3.5	16												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
4.0-4.5	17												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
5.0-5.5	17	100	100	100	98	90	69	36	25	11		2	SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
6.0-6.5	17												SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	17											16	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
10.0-11.5	15	100	100	100	98	92	73	42	36	20		23	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
12.5-14.0	17											30	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
15.0-16.5	19	100	100	100	99	93	73	49	35	14		19	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-2

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	17											31	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
20.0-21.5	14	100	100	100	99	92	77	47	32	18		13	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
23.0-25.0	16											21	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-3

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	3												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	3												SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
2.0-2.5	10	100	100	100	99	95	84	51	32	11		10	CL	A-6	4	STIFF BROWN SANDY CLAY
3.0-3.5	14												CL	A-6	4	STIFF BROWN SANDY CLAY
4.0-4.5	16												CL	A-6	4	STIFF BROWN SANDY CLAY
5.0-5.5	18	100	100	100	100	99	87	53	34	18		11	CL	A-6	4	STIFF BROWN SANDY CLAY
6.0-6.5	14												CL	A-6	4	STIFF BROWN SANDY CLAY
7.5-9.0	25											16	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
10.0-11.5	19	100	100	100	100	95	77	51	32	15		15	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
12.5-14.0	18											15	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
15.0-16.5	25											18	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-3

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	28	100	100	100	100	100	98	89				15	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
20.0-21.5	48											14	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY
23.0-25.0	62	100	100	100	100	100	95	74	51	30		15	CH	A-7-6	5	VERY STIFF BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-4

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	VERY LOOSE GRAY SILTY FINE SAND
1.0-1.5	8	100	100	100	98	90	65	28					SM	A-2-4	1	VERY LOOSE BROWN SILTY FINE SAND
2.0-2.5	20											2	SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
3.0-3.5	22	100	100	100	98	92	75	47					SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
4.0-4.5	20												SC	A-6	3	VERY LOOSE RED AND GRAY CLAYEY SAND
5.0-5.5	15											4	SC	A-6	3	LOOSE RED AND GRAY CLAYEY SAND
6.0-6.5	14	100	100	100	98	91	69	42	33	17			SC	A-6	3	LOOSE RED AND GRAY CLAYEY SAND
7.5-9.0	12											24	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
10.0-11.5	13	100	100	100	99	90	69	36	27	15		23	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
12.5-14.0	12											29	SC	A-6	3	DENSE BROWN AND PURPLE CLAYEY SAND
15.0-16.5	15	100	100	100	99	92	71	42	35	18		21	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-4

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18											24	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
20.0-21.5	20											9	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND
23.0-25.0	20											17	SC	A-6	3	MEDIUM DENSE BROWN AND PURPLE CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-5

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	12												SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
1.0-1.5	30												SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
2.0-2.5	13	100	100	100	98	93	71	36				6	SC	A-6	3	LOOSE BROWN CLAYEY SAND WITH WOOD
3.0-3.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	15	100	100	99	93	84	60	37	32	14		6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	23	100	100	100	100	99	86	58	45	24		13	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
10.0-11.5	27											16	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
12.5-14.0	25	100	100	100	100	98	80	51	41	18		11	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY
15.0-16.5	27											12	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-5

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	27	100	100	100	100	99	75	51	48	27		20	CL	A-7-6	5	VERY STIFF GRAY AND PURPLE SANDY CLAY
20.0-21.5	27											10	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY
23.0-25.0	36											7	CL	A-7-6	5	STIFF GRAY AND PURPLE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-6

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	4												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
2.0-2.5	13	100	100	100	99	93	73	38				9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	16												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0-4.5	18												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	19											1	SC	A-6	3	VERY LOOSE BROWN CLAYEY SAND
6.0-6.5	20	100	100	100	99	93	71	36	21	11			SC	A-6	3	VERY LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	15											13	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	55	100	100	100	100	99	97	91	75	46		12	CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	55											14	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
15.0-16.5	46	100	100	100	100	99	95	82	70	43		10	CH	A-7-6	5	STIFF GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-6

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	41											14	CH	A-7-6	5	VERY STIFF GRAY HIGHLY PLASTIC CLAY
20.0-21.5	32											15	CL	A-7-6	5	VERY STIFF GRAY SANDY CLAY
23.0-25.0	29	100	100	100	100	99	97	76	45	21		15	CL	A-7-6	5	VERY STIFF GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-7

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	8												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
1.0-1.5	4	100	100	100	98	90	62	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	5											4	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	13												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	14												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	98	91	71	41	30	14		4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	22											10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	37	100	100	100	100	100	99	92	80	53		8	CH	A-7-6	5	STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	33											18	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
15.0-16.5	36											10	CH	A-7-6	5	STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-7

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	32	100	100	100	100	99	98	84	51	30		16	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
20.0-21.5	30											18	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY
23.0-25.0	32	100	100	100	100	100	97	82				21	CH	A-7-6	5	VERY STIFF GRAY AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-8 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	2												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
1.0-1.5	10	100	100	100	98	92	72	41	27	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0-2.5	6											10	SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
3.0-3.5	4												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
4.0-4.5	10												SC	A-6	3	MEDIUM DENSE GRAY CLAYEY SAND
5.0-5.5	14	100	100	100	98	92	71	41	24	11		8	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
7.5-9.0	14	100	100	100	98	91	65	40	29	16		26	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
10.0-11.5	14											16	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
12.5-14.0	50	100	100	100	100	99	97	96	89	60		18	CH	A-7-6	5	VERY STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY
15.0-16.5	52											10	CH	A-7-6	5	STIFF GRAY AND ORANGE HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-8 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	24	100	100	100	99	93	56	51	41	23		17	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY
20.0-21.5	22											13	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY
23.0-25.0	23	100	100	100	100	99	98	62	41	11		14	CL	A-7-6	5	VERY STIFF GRAY AND ORANGE SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-9

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	2												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0-1.5	10	100	100	100	98	92	70	37	19	11			SC	A-6	3	LOOSE BROWN CLAYEY SAND
2.0-2.5	18											6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	18												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	99	93	77	49				7	SC	A-6	3	LOOSE BROWN AND GRAY CLAYEY SAND
6.0-6.5	15												SC	A-6	3	LOOSE BROWN AND GRAY CLAYEY SAND
7.5-9.0	15	100	100	100	99	92	69	44	32	17		21	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	14											22	SC	A-6	3	MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND
12.5-14.0	16	100	100	100	99	94	78	49	33	18		15	SC	A-6	3	MEDIUM DENSE ORANGE AND GRAY CLAYEY SAND
15.0-16.5	36											16	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-9

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	25	100	100	100	98	93	80	54	37	18		18	CL	A-6	4	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	30											9	CH	A-7-6	5	STIFF RED AND GRAY HIGHLY PLASTIC CLAY
23.0-25.0	31	100	100	100	100	99	98	78	55	35		13	CH	A-7-6	5	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-10 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	10												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	3	100	100	96	75	41	22	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	9											7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	11	100	100	100	98	91	70	41					SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	21											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	16	100	100	100	99	95	61	40	33	17			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	18											12	CL	A-6	4	STIFF GRAY AND BROWN SANDY CLAY
10.0-11.5	20											14	CL	A-6	4	VERY STIFF GRAY AND BROWN SANDY CLAY
12.5-14.0	23	100	100	100	100	98	88	55	28	11		20	CL	A-6	4	VERY STIFF GRAY AND BROWN SANDY CLAY
15.0-16.5	18											19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-10

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	21	100	100	100	99	97	78	48	35	17		26	SC	A-6	3	DENSE BROWN CLAYEY SAND
20.0-21.5												14	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
23.0-25.0	21	100	100	100	100	99	84	36	24	14		13	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SANDY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-11

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	4												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	8	100	100	100	98	91	69	33	17	5			SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
2.0-2.5	12											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
3.0-3.5	15												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	98	93	75	48	31	15		9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	13											29	SC	A-6	3	DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	30	100	100	97	95	93	91	89	70	41		21	CH	A-7-6	5	VERY STIFF BROWN AND GRAY HIGHLY PLASTIC CLAY
12.5-14.0	31											31	CH	A-7-6	5	HARD BROWN AND GRAY HIGHLY PLASTIC CLAY
15.0-16.5	16	100	100	100	96	84	59	36	25	11		10	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-11

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	19											8	SC	A-6	3	LOOSE BROWN CLAYEY SAND
20.0-21.5	21	100	100	100	98	89	67	38	25	11		7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
23.0-25.0	25											9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-12

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	5	100	100	100	98	90	66	26					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	11											7	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	15												SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
4.0-4.5	17												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	16	100	100	100	99	93	74	47	31	11		7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	15												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	13	100	100	100	99	93	64	36	26	11		19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	10											24	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	19											21	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
15.0-16.5	26	100	100	99	98	95	87	64	41	18		15	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-12

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	23											15	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	20											11	CL	A-7-6	5	STIFF BROWN AND GRAY SANDY CLAY
23.0-25.0	22	100	100	100	100	95	84	66	41	22		11	CL	A-7-6	5	STIFF BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-13

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	3												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	8	100	100	100	99	91	67	33				4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0-3.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	7											7	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	17	100	100	100	99	94	66	45	36	19			SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	16											14	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
10.0-11.5	19	100	100	100	97	72	48	42	39	20		20	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
12.5-14.0	18											16	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
15.0-16.5	21	100	100	100	99	95	79	49	33	15		12	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-13

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	20											21	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
20.0-21.5	21											14	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND
23.0-25.0	10	100	100	100	99	88	49	26	34	11		12	SC	A-2-6	2	MEDIUM DENSE BROWN CLAYEY FINE SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-14 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
1.0-1.5	4												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	7	100	100	100	98	90	62	23				4	SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
3.0-3.5	10												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	17	100	100	100	98	92	71	41	28	13		5	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	18	100	100	100	99	94	72	49	40	24		11	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	18											21	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	20	100	100	100	98	93	74	47	37	20		23	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
15.0-16.5	16											17	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-14 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	17											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
20.0-21.5	14											19	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND
23.0-25.0	14	100	100	100	99	94	71	39	29	14		22	SC	A-6	3	MEDIUM DENSE BROWN AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-15 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	9												SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	6	100	100	100	96	81	44	21					SM	A-2-4	1	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	7											7	SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
3.0-3.5	11												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
4.0-4.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
5.0-5.5	15	100	100	100	98	90	63	37	25	15		6	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
6.0-6.5	14												SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
7.5-9.0	16	100	100	100	98	91	67	41	33	16		9	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	15											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
12.5-14.0	18	100	100	100	97	89	64	36	20	11		17	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
15.0-16.5	28											18	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-15

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	23											28	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
20.0-21.5	16											28	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
23.0-25.0	17	100	100	100	99	94	69	45	30	11		32	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-16 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND WITH LIMEROCK
1.0-1.5	9	100	100	100	97	82	51	21					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND WITH LIMEROCK
2.0-2.5	13											4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
3.0-3.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	19												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	18	100	100	100	98	92	70	49	30	12		4	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	11											26	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
10.0-11.5	12	100	100	100	99	93	62	36	26	13		19	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
12.5-14.0	13											18	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND
15.0-16.5	15											24	SC	A-6	3	MEDIUM DENSE RED AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-16

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18											21	CH	A-7-6	5	VERY STIFF RED AND GRAY HIGHLY PLASTIC CLAY
20.0-21.5	25	100	100	99	97	94	84	71	54	29		31	CH	A-7-6	5	HARD RED AND GRAY HIGHLY PLASTIC CLAY
23.0-25.0	21											30	CH	A-7-6	5	HARD RED AND BROWN HIGHLY PLASTIC CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-17 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	7												SM	A-2-4	1	LOOSE GRAY SILTY FINE SAND
1.0-1.5	6	100	100	100	97	83	51	23					SM	A-2-4	1	LOOSE BROWN SILTY FINE SAND
2.0-2.5	10											4	SC	A-2-6	2	LOOSE BROWN CLAYEY FINE SAND
3.0-3.5	12												SC	A-6	3	LOOSE BROWN CLAYEY SAND
4.0-4.5	16												SC	A-6	3	LOOSE BROWN CLAYEY SAND
5.0-5.5	17	100	100	100	98	90	69	44	30	12		6	SC	A-6	3	LOOSE BROWN CLAYEY SAND
6.0-6.5	17												SC	A-6	3	LOOSE BROWN CLAYEY SAND
7.5-9.0	18	100	100	100	98	91	72	49	35	12		19	SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
10.0-11.5	15											35	SC	A-6	3	DENSE BROWN AND GRAY CLAYEY SAND
12.5-14.0	17	100	100	100	99	93	70	47	33	18		30	SC	A-6	3	DENSE RED AND GRAY CLAYEY SAND
15.0-16.5	14											24	SC	A-6	3	DENSE RED AND GRAY CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-17

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	18	100	100	100	99	93	71	51	43	24		24	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
20.0-21.5	27											21	CL	A-7-6	5	VERY STIFF BROWN AND GRAY SANDY CLAY
23.0-25.0	34	100	100	99	97	95	87	72	45	21		25	CL	A-7-6	5	HARD BROWN AND GRAY SANDY CLAY

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC. **PROJECT NO.: 23-59-10-01**

BORING: PB-18 **LOCATION: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
0.0-0.5	6												SM	A-2-4	1	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	11	100	100	99	96	86	60	36	20	11			SC	A-6	3	MEDIUM DENSE BROWN CLAYEY SAND
2.0-2.5	18											10	CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
3.0-3.5	17												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
4.0-4.5	15												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
5.0-5.5	17	100	100	100	99	94	75	54	34	14		5	CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
6.0-6.5	14												CL	A-6	4	STIFF RED AND GRAY SANDY CLAY
7.5-9.0	20	100	100	100	99	93	66	51	39	23		19	CL	A-6	4	VERY STIFF RED AND GRAY SANDY CLAY
10.0-11.5	14											19	CL	A-6	4	VERY STIFF RED AND GRAY SANDY CLAY
12.5-14.0	14	100	100	100	98	80	54	36	31	15		25	SC	A-6	3	DENSE GRAY AND BROWN CLAYEY SAND
15.0-16.5	18											19	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND

SOIL CLASSIFICATION DATA

PROJECT: BANNERMAN ROAD CORRIDOR STUDY

CLIENT: RS&H, INC.

PROJECT NO.: 23-59-10-01

BORING: PB-18

LOCATION: LEON COUNTY, FLORIDA

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	ORG. (%)	SPT-N VALUE	USCS	AASHTO	MAT. NO.	DESCRIPTION
17.5-19.0	13											23	SC	A-6	3	MEDIUM DENSE GRAY AND BROWN CLAYEY SAND
20.0-21.5	27											18	CL	A-6	4	VERY STIFF BROWN SANDY CLAY
23.0-25.0	17	100	100	99	97	94	79	63	26	11		28	CL	A-6	4	HARD BROWN SANDY CLAY

APPENDIX D

USDA SOIL SURVEY

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LEGEND

PROPOSED ROADWAY ALIGNMENT

USDA SOIL SURVEY DESCRIPTION

- 5, BLANTON FINE SAND; 0 TO 5 PERCENT SLOPES
- 10, DOTHAN LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 11, DOTHAN LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 24, LUCY FINE SAND; 0 TO 5 PERCENT SLOPES
- 29, NORFOLK LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 30, NORFOLK LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 33, ORANGEBURG FINE SANDY LOAM; 2 TO 5 PERCENT SLOPES
- 34, ORANGEBURG FINE SANDY LOAM; 5 TO 8 PERCENT SLOPES
- 35, ORANGEBURG FINE SANDY LOAM; 8 TO 12 PERCENT SLOPES
- 39, PELHAM FINE SAND
- 41, PLUMMER FINE SAND
- 52, YONGES FINE SANDY LOAM

0 200 400 Feet

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.		
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		

EGS Environmental and Geotechnical Specialists, Inc.
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE: USDA SOIL SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011 FIGURE NO.: D-1

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS **Environmental and Geotechnical Specialists, Inc.** 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: USDA SOIL SURVEY MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		DATE: June 2011 / FIGURE NO.: D-2

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.	EGS Environmental and Geotechnical Specialists, Inc. 3154 Eliza Road Tallahassee, Florida 32308 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE: USDA SOIL SURVEY MAP PRELIMINARY INFILTRATION INVESTIGATION BANNERMAN ROAD CORRIDOR STUDY LEON COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			DATE: June 2011
PROJ. NO.: 23-59-10-01	SCALE:		FIGURE NO.: D-3

LEGEND

PROPOSED ROADWAY ALIGNMENT

USDA SOIL SURVEY DESCRIPTION

- 5, BLANTON FINE SAND; 0 TO 5 PERCENT SLOPES
- 10, DOTHAN LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 11, DOTHAN LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 24, LUCY FINE SAND; 0 TO 5 PERCENT SLOPES
- 29, NORFOLK LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
- 30, NORFOLK LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
- 33, ORANGEBURG FINE SANDY LOAM; 2 TO 5 PERCENT SLOPES
- 34, ORANGEBURG FINE SANDY LOAM; 5 TO 8 PERCENT SLOPES
- 35, ORANGEBURG FINE SANDY LOAM; 8 TO 12 PERCENT SLOPES
- 39, PELHAM FINE SAND
- 41, PLUMMER FINE SAND
- 52, YONGES FINE SANDY LOAM

0 200 400 Feet

DRAWN: M. MONTEITH, E.I.	CHECKED: M. HAYDEN, P.E.		
ENGINEER: M. HAYDEN, P.E.			
CLIENT: R&SH, INC.			
PROJ. NO.: 23-59-10-01	SCALE:		

EGS **Environmental and Geotechnical Specialists, Inc.**
3154 Eliza Road
Tallahassee, Florida 32308
Office #: (850) 386-1253
Fax #: (850) 385-8050

TITLE:
USDA SOIL SURVEY MAP
PRELIMINARY INFILTRATION INVESTIGATION
BANNERMAN ROAD CORRIDOR STUDY
LEON COUNTY, FLORIDA

DATE: June 2011 | FIGURE NO.: D-4

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash.

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	**Depth**	**USDA texture**	**Classification**		**Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
			Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
	In				*Pct*	*Pct*					*Pct*	
5—Blanton fine sand, 0 to 5 percent slopes												
Blanton	0-7	*Fine sand	SP-SM	A-3, A-2-4	0	0	100	90-100	65-100	5-12	0-14	NP
	7-52	*Fine sand	SP-SM	A-2-4, A-3	0	0	100	90-100	65-100	5-12	0-14	NP
	52-80	*Sandy clay loam, Fine sandy loam	SM, SC, SC-SM	A-2-6, A-4, A-6, A-2-4	0	0	100	95-100	69-95	25-50	18-43	4-12
10—Dothan loamy fine sand, 2 to 5 percent slopes												
Dothan	0-5	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	5-13	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	13-46	*Sandy clay loam, Sandy loam	SC-SM, SM, SC	A-6, A-2, A-4	0	0	95-100	92-100	68-90	23-45	0-40	NP-15
	46-80	*Sandy clay loam, Sandy clay	SC-SM, CL, SC	A-4, A-6, A-7, A-2	0	0	95-100	92-100	70-95	30-50	25-45	4-18

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
11—Dothan loamy fine sand, 5 to 8 percent slopes												
Dothan	0-6	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	6-10	*Fine sandy loam, Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP
	10-64	*Sandy clay loam, Sandy loam	SM, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	68-90	23-45	0-45	NP-15
	64-80	*Sandy clay loam, Sandy clay	CL, SC, SC-SM	A-4, A-6, A-7, A-2	0	0	95-100	92-100	70-95	30-50	25-45	4-18
16—Fuquay fine sand, 0 to 5 percent slopes												
Fuquay	0-7	*Fine sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-83	5-20	0-14	NP
	7-37	*Fine sand, Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-83	5-20	0-14	NP
	37-64	*Sandy clay loam, Sandy loam, fine sandy loam	SC-SM, SM, SC	A-4, A-6, A-2	0	0	85-100	85-100	60-80	23-45	0-35	NP-18
	64-80	*Sandy clay, Sandy clay loam	SC, CL	A-2, A-4, A-6	0	0	95-100	90-100	60-93	28-55	20-39	8-25
25—Lucy fine sand, 5 to 8 percent slopes												
Lucy	0-5	*Fine sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-87	10-30	0-14	NP
	5-30	*Fine sand, Loamy fine sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-87	10-30	0-14	NP
	30-75	*Sandy clay loam, Fine sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	60-95	20-50	20-40	5-20
	75-80	*Fine sandy loam, Loamy fine sand	SM	A-2	0	0	95-100	92-100	60-80	13-30	0-14	NP

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
27—Lynchburg fine sandy loam												
Lynchburg, non-hydric	0-8	*Fine sandy loam	ML, SM	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	8-18	*Fine sandy loam	ML, SM	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	18-65	*Sandy clay loam, Sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	*Sandy clay loam, Sandy clay, clay	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	70-100	25-73	15-40	4-20
Lynchburg, hydric	0-8	*Fine sandy loam	SM, ML	A-4, A-2	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	8-18	*Fine sandy loam	SM, ML	A-2, A-4	0	0	92-100	90-100	75-100	25-65	0-30	NP-7
	18-65	*Sandy clay loam, Sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	92-100	90-100	70-100	25-67	15-40	4-18
	65-80	*Sandy clay loam, Sandy clay, clay	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	92-100	70-100	25-73	15-40	4-20

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
29—Norfolk loamy fine sand, 2 to 5 percent slopes												
Norfolk	0-4	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	50-91	13-30	0-20	NP
	4-8	*Loamy fine sand, Loamy sand	SM	A-2	0	0	95-100	92-100	50-95	13-30	0-20	NP
	8-58	*Sandy clay loam, Fine sandy loam, clay loam	CL-ML, SC, SC-SM, CL	A-4, A-6, A-2	0	0	95-100	91-100	70-91	30-55	20-38	4-15
	58-80	*Sandy clay, Sandy clay loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0	0	100	98-100	65-98	36-72	20-45	4-22
30—Norfolk loamy fine sand, 5 to 8 percent slopes												
Norfolk	0-5	*Loamy fine sand	SM	A-2	0	0	95-100	92-100	50-91	13-30	0-20	NP
	5-80	*Sandy clay loam, Fine sandy loam, clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6, A-2	0	0	95-100	91-100	70-96	30-55	20-38	4-15
32—Ocilla fine sand												
Ocilla	0-3	*Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-100	8-35	0-14	NP
	3-29	*Loamy fine sand, Fine sand	SM, SP-SM	A-3, A-2	0	0	100	95-100	75-100	8-35	0-14	NP
	29-39	*Fine sandy loam, Sandy loam, sandy clay loam	CL, SC, SM	A-4, A-6, A-2	0	0	100	95-100	80-100	30-55	0-40	NP-18
	39-80	*Sandy clay loam, Sandy loam, fine sandy loam	CL, SC, SM	A-4, A-6, A-2	0	0	100	95-100	80-100	30-55	0-40	NP-18

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
33—Orangeburg fine sandy loam, 2 to 5 percent slopes												
Orangeburg	0-5	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	5-10	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	10-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-4, A-6	0	0	98-100	95-100	71-96	38-58	22-40	8-19
34—Orangeburg fine sandy loam, 5 to 8 percent slopes												
Orangeburg	0-6	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	6-18	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	18-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-4, A-6	0	0	98-100	95-100	71-96	38-58	22-40	8-19
35—Orangeburg fine sandy loam, 8 to 12 percent slopes												
Orangeburg	0-5	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	5-19	*Fine sandy loam	SM	A-2	0	0	98-100	95-100	75-95	20-35	0-14	NP
	19-80	*Sandy clay loam, Fine sandy loam	SC, CL	A-6, A-4	0	0	98-100	95-100	71-96	38-58	22-40	8-19

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
39—Pelham fine sand												
Pelham, hydric	0-5	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	5-26	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	26-80	*Sandy clay loam, Sandy loam, fine sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	100	95-100	65-90	30-50	15-30	2-12
Pelham, non-hydric	0-5	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	5-26	*Fine sand	SM	A-2	0	0	100	95-100	75-90	10-30	0-14	NP
	26-80	*Sandy clay loam, Sandy loam, fine sandy loam	SC, SC-SM, SM	A-6, A-2, A-4	0	0	100	95-100	65-90	30-50	15-30	2-12
41—Plummer fine sand												
Plummer, hydric	0-17	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	17-61	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	61-80	*Fine sandy loam, Sandy loam, sandy clay loam	SM, SC, SC-SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14
Plummer, non-hydric	0-17	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	17-61	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	61-80	*Fine sandy loam, Sandy loam, sandy clay loam	SC, SC-SM, SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14

Engineering Properties– Leon County, Florida												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
42—Plummer mucky fine sand, depressional												
Plummer, depressional	0-13	*Fine sand	SP-SM, SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	13-65	*Fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-96	5-26	0-14	NP
	65-80	*Sandy clay loam, Sandy loam, fine sandy loam	SM, SC, SC-SM	A-2-6, A-2-4	0	0	100	97-100	76-96	26-35	0-31	NP-14
48—Troup fine sand, 0 to 5 percent slopes												
Troup	0-8	*Fine sand	SM	A-4, A-2	0	0	95-100	90-100	65-90	15-40	0-14	NP
	8-44	*Fine sand	SM	A-4, A-2	0	0	95-100	90-100	65-90	15-40	0-14	NP
	44-80	*Sandy clay loam, Fine sandy loam	CL-ML, SC, SC-SM, CL	A-2, A-4	0	0	95-100	95-100	70-90	24-55	10-30	4-10
52—Yonges fine sandy loam												
Yonges	0-5	*Fine sandy loam	SM, ML	A-4	0	0	100	100	90-100	25-55	0-30	NP-7
	5-9	*Fine sand	SM	A-2-4	0	0	100	100	90-100	25-55	0-14	NP
	9-71	*Sandy clay loam	CL-ML, SC, SC-SM, CL	A-7, A-4, A-6	0	0	100	100	95-100	40-70	25-45	6-25
	71-80	*Sandy clay loam, Fine sandy loam	SM, CL, ML, SC	A-6, A-4	0	0	100	100	80-100	40-65	20-40	3-22
99—Water												
Water	—	—	—	—	—	—	—	—	—	—	—	—

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
5—Blanton fine sand, 0 to 5 percent slopes														
Blanton	0-7	-90-	0- 7- 15	2- 4- 7	1.35-1.60	42.00-141.00	0.03-0.07	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	7-52	-92-	0- 5- 15	2- 4- 7	1.35-1.60	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.5	.10	.10			
	52-80	-70-	0- 3- 28	12-27- 30	1.60-1.70	4.20-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.20	.20			
10—Dothan loamy fine sand, 2 to 5 percent slopes														
Dothan	0-5	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	1.0-3.0	.15	.15	5	2	134
	5-13	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-1.0	.15	.15			
	13-46	-70-	0- 8- 28	18-22- 35	1.60-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
	46-80	-50-	0-18- 28	18-32- 40	1.60-1.70	1.40-4.00	0.08-0.12	0.0-2.9	0.0-0.5	.28	.28			
11—Dothan loamy fine sand, 5 to 8 percent slopes														
Dothan	0-6	-84-	0- 8- 30	5- 8- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	1.0-3.0	.15	.15	5	2	134
	6-10	-79-	0- 8- 30	10-13- 15	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-1.0	.15	.15			
	10-64	-70-	0- 8- 28	18-22- 35	1.60-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
	64-80	-50-	0-18- 28	18-32- 40	1.60-1.70	1.40-4.00	0.08-0.12	0.0-2.9	0.0-0.5	.28	.28			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
16—Fuquay fine sand, 0 to 5 percent slopes														
Fuquay	0-7	-89-	0- 6- 15	2- 5- 7	1.40-1.50	42.00-141.00	0.04-0.09	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	7-37	-89-	0- 7- 15	2- 5- 7	1.40-1.50	42.00-141.00	0.04-0.09	0.0-2.9	0.0-1.0	.10	.10			
	37-64	-70-	0- 5- 28	15-25- 35	1.60-1.70	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	64-80	-57-	0- 4- 28	20-39- 40	1.60-1.70	0.42-1.40	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20			
25—Lucy fine sand, 5 to 8 percent slopes														
Lucy	0-5	-90-	0- 6- 15	2- 4- 12	1.35-1.65	42.00-141.00	0.06-0.10	0.0-2.9	1.0-2.5	.10	.10	5	1	220
	5-30	-90-	0- 4- 15	2- 6- 12	1.35-1.65	42.00-141.00	0.06-0.10	0.0-2.9	0.0-1.0	.10	.10			
	30-75	-69-	0- 4- 28	18-28- 35	1.55-1.70	4.00-14.00	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
	75-80	-79-	0- 1- 30	10-20- 20	1.50-1.60	14.11-42.35	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			
27—Lynchburg fine sandy loam														
Lynchburg, non-hydric	0-8	-74-	0-14- 50	5-13- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.5-5.0	.20	.20	5	3	86
	8-18	-79-	0-11- 50	5-10- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.0-1.0	.20	.20			
	18-65	-65-	0- 8- 28	18-27- 35	1.55-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	65-80	-59-	0- 7- 28	20-34- 50	1.55-1.70	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.20	.20			
Lynchburg, hydric	0-8	-74-	0-14- 50	5-13- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.5-5.0	.20	.20	5	3	86
	8-18	-79-	0-11- 50	5-10- 20	1.60-1.70	14.00-42.00	0.09-0.13	0.0-2.9	0.0-1.0	.20	.20			
	18-65	-65-	0- 8- 28	18-27- 35	1.55-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	65-80	-59-	0- 7- 28	20-34- 50	1.55-1.70	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.20	.20			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
29—Norfolk loamy fine sand, 2 to 5 percent slopes														
Norfolk	0-4	-83-	0-11- 30	2- 6- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	1.0-3.0	.17	.17	5	2	134
	4-8	-85-	0- 7- 30	2- 8- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
	8-58	-61-	0- 6- 28	18-34- 35	1.30-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	58-80	-60-	0- 3- 20	20-38- 40	1.20-1.70	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
30—Norfolk loamy fine sand, 5 to 8 percent slopes														
Norfolk	0-5	-83-	0-11- 30	2- 6- 10	1.40-1.70	42.00-141.00	0.06-0.10	0.0-2.9	1.0-3.0	.17	.17	5	2	134
	5-80	-61-	0- 6- 28	18-34- 35	1.30-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
32—Ocilla fine sand														
Ocilla	0-3	-89-	0- 8- 15	2- 4- 7	1.40-1.50	14.00-141.00	0.05-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	3-29	-87-	0- 9- 30	2- 5- 7	1.40-1.50	14.00-141.00	0.05-0.08	0.0-2.9	0.0-1.0	.10	.10			
	29-39	-68-	0-17- 28	15-15- 35	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			
	39-80	-55-	0-14- 28	15-31- 35	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
33— Orangeburg fine sandy loam, 2 to 5 percent slopes														
Orangeburg	0-5	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-10	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	10-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
34— Orangeburg fine sandy loam, 5 to 8 percent slopes														
Orangeburg	0-6	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	6-18	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	18-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
35— Orangeburg fine sandy loam, 8 to 12 percent slopes														
Orangeburg	0-5	-75-	0-11- 50	5-14- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-19	-75-	0- 8- 50	5-17- 20	1.40-1.70	14.00-42.00	0.07-0.10	0.0-2.9	0.5-1.5	.20	.20			
	19-80	-63-	0- 8- 28	18-29- 35	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
39—Pelham fine sand														
Pelham, hydric	0-5	-89-	0- 5- 15	2- 6- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	1.0-6.0	.10	.10	5	1	220
	5-26	-91-	0- 6- 15	2- 3- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.5	.10	.10			
	26-80	-67-	0- 4- 28	15-28- 35	1.60-1.80	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
Pelham, non-hydric	0-5	-89-	0- 5- 15	2- 6- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	1.0-6.0	.10	.10	5	1	220
	5-26	-91-	0- 6- 15	2- 3- 7	1.10-1.60	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.5	.10	.10			
	26-80	-67-	0- 4- 28	15-28- 35	1.60-1.80	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24			
41—Plummer fine sand														
Plummer, hydric	0-17	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	17-61	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	61-80	-80-	0- 5- 50	15-16- 30	1.50-1.90	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			
Plummer, non-hydric	0-17	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	1	220
	17-61	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	61-80	-80-	0- 5- 50	15-16- 30	1.50-1.90	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			
42—Plummer mucky fine sand, depressional														
Plummer, depressional	0-13	-91-	0- 6- 15	2- 3- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	1.0-3.0	.10	.10	5	8	0
	13-65	-93-	0- 5- 15	2- 2- 7	1.30-1.80	14.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
	65-80	-73-	0- 5- 50	15-23- 30	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.15	.15			

Physical Soil Properties– Leon County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
48—Troup fine sand, 0 to 5 percent slopes														
Troup	0-8	-89-	0- 8- 15	2- 3- 7	1.45-1.65	42.00-141.00	0.05-0.10	0.0-2.9	1.0-2.0	.10	.10	5	1	220
	8-44	-90-	0- 6- 15	2- 5- 7	1.45-1.65	42.00-141.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.10			
	44-80	-71-	0- 3- 28	15-27- 30	1.50-1.70	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20			
52—Yonges fine sandy loam														
Yonges	0-5	-58-	0-32- 50	2-10- 20	1.35-1.70	4.00-42.00	0.09-0.14	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-9	-88-	0-10- 50	2- 2- 20	1.35-1.70	4.00-42.00	0.09-0.14	0.0-2.9	0.5-1.0	.20	.20			
	9-71	-67-	0-10- 28	20-23- 35	1.60-1.70	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.5	.17	.17			
	71-80	-67-	0- 4- 28	15-29- 35	1.20-1.70	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
99—Water														
Water	—	—	—	—	—	—	—	—	—					

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
5—Blanton fine sand, 0 to 5 percent slopes										
Blanton	A	Negligible	January	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	February	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	March	5.0-6.0	5.5-6.0	—	—	None	—	None
	A	Negligible	December	5.0-6.0	5.5-6.0	—	—	None	—	None
10—Dothan loamy fine sand, 2 to 5 percent slopes										
Dothan	B	Low	January	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	February	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	March	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Low	April	3.5-4.0	4.0-4.5	—	—	None	—	None
11—Dothan loamy fine sand, 5 to 8 percent slopes										
Dothan	B	Medium	January	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	February	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	March	3.5-4.0	4.0-4.5	—	—	None	—	None
	B	Medium	April	3.5-4.0	4.0-4.5	—	—	None	—	None
16—Fuquay fine sand, 0 to 5 percent slopes										
Fuquay	B	Very low	January	4.0-6.0	4.5-6.0	—	—	None	—	None
	B	Very low	February	4.0-6.0	4.5-6.0	—	—	None	—	None
	B	Very low	March	4.0-6.0	4.5-6.0	—	—	None	—	None
25—Lucy fine sand, 5 to 8 percent slopes										
Lucy	B	Low	Jan-Dec	—	—	—	—	None	—	—

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
27—Lynchburg fine sandy loam										
Lynchburg, non-hydric	B/D	Very high	January	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	February	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	March	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	April	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	November	1.0-1.5	>6.0	—	—	None	—	None
	B/D	Very high	December	1.0-1.5	>6.0	—	—	None	—	None
Lynchburg, hydric	B/D	Very high	January	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	February	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	March	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	April	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	November	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Very high	December	0.0-0.5	>6.0	—	—	None	—	None
29—Norfolk loamy fine sand, 2 to 5 percent slopes										
Norfolk	B	Low	January	4.0-6.0	>6.0	—	—	None	—	None
	B	Low	February	4.0-6.0	>6.0	—	—	None	—	None
	B	Low	March	4.0-6.0	>6.0	—	—	None	—	None
30—Norfolk loamy fine sand, 5 to 8 percent slopes										
Norfolk	B	Medium	January	4.0-6.0	>6.0	—	—	None	—	None
	B	Medium	February	4.0-6.0	>6.0	—	—	None	—	None
	B	Medium	March	4.0-6.0	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
32—Ocilla fine sand										
Ocilla	B/D	Very low	January	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	February	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	March	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	April	1.0-2.5	>6.0	—	—	None	—	None
	B/D	Very low	December	1.0-2.5	>6.0	—	—	None	—	None
33—Orangeburg fine sandy loam, 2 to 5 percent slopes										
Orangeburg	B	Low	Jan-Dec	—	—	—	—	None	—	—
34—Orangeburg fine sandy loam, 5 to 8 percent slopes										
Orangeburg	B	Medium	Jan-Dec	—	—	—	—	None	—	—
35—Orangeburg fine sandy loam, 8 to 12 percent slopes										
Orangeburg	B	Medium	Jan-Dec	—	—	—	—	None	—	—
39—Pelham fine sand										
Pelham, hydric	B/D	Low	January	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	February	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	March	0.0-0.5	>6.0	—	—	None	—	None
	B/D	Low	April	0.0-0.5	>6.0	—	—	None	—	None
Pelham, non-hydric	B/D	Low	January	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	February	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	March	0.5-1.5	>6.0	—	—	None	—	None
	B/D	Low	April	0.5-1.5	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
41—Plummer fine sand										
Plummer, hydric	A/D	Negligible	January	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	February	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	March	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	April	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	May	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	June	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	July	0.0-0.5	>6.0	—	—	None	—	None
	A/D	Negligible	December	0.0-0.5	>6.0	—	—	None	—	None
Plummer, non-hydric	A/D	Negligible	January	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	February	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	March	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	April	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	May	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	June	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	July	0.5-1.5	>6.0	—	—	None	—	None
	A/D	Negligible	December	0.5-1.5	>6.0	—	—	None	—	None

Water Features– Leon County, Florida										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
42—Plummer mucky fine sand, depressional										
Plummer, depressional	A/D	Negligible	January	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	February	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	March	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	April	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	May	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	June	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	July	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
	A/D	Negligible	December	0.0	>6.0	0.0-2.0	Long	Frequent	—	None
48—Troup fine sand, 0 to 5 percent slopes										
Troup	A	Negligible	Jan-Dec	—	—	—	—	None	—	—
52—Yonges fine sandy loam										
Yonges	C/D	Very high	January	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	February	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	March	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	April	0.0-1.0	>6.0	—	—	None	—	—
	C/D	Very high	November	0.0-1.0	>6.0	—	—	None	Long	Frequent
	C/D	Very high	December	0.0-1.0	>6.0	—	—	None	Long	Frequent
99—Water										
Water	—	—	Jan-Dec	—	—	—	—	None	—	—

APPENDIX E

GRAIN SIZE CORRELATION CURVES

STRATUM 1

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-7 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	62
200	0.075	21

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.035 mm

D_{50} = 0.16 mm

D_{60} = 0.18 mm

K = 0.0015 (cm/sec)

2.1 (in/hr)

C_u = 5.1

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

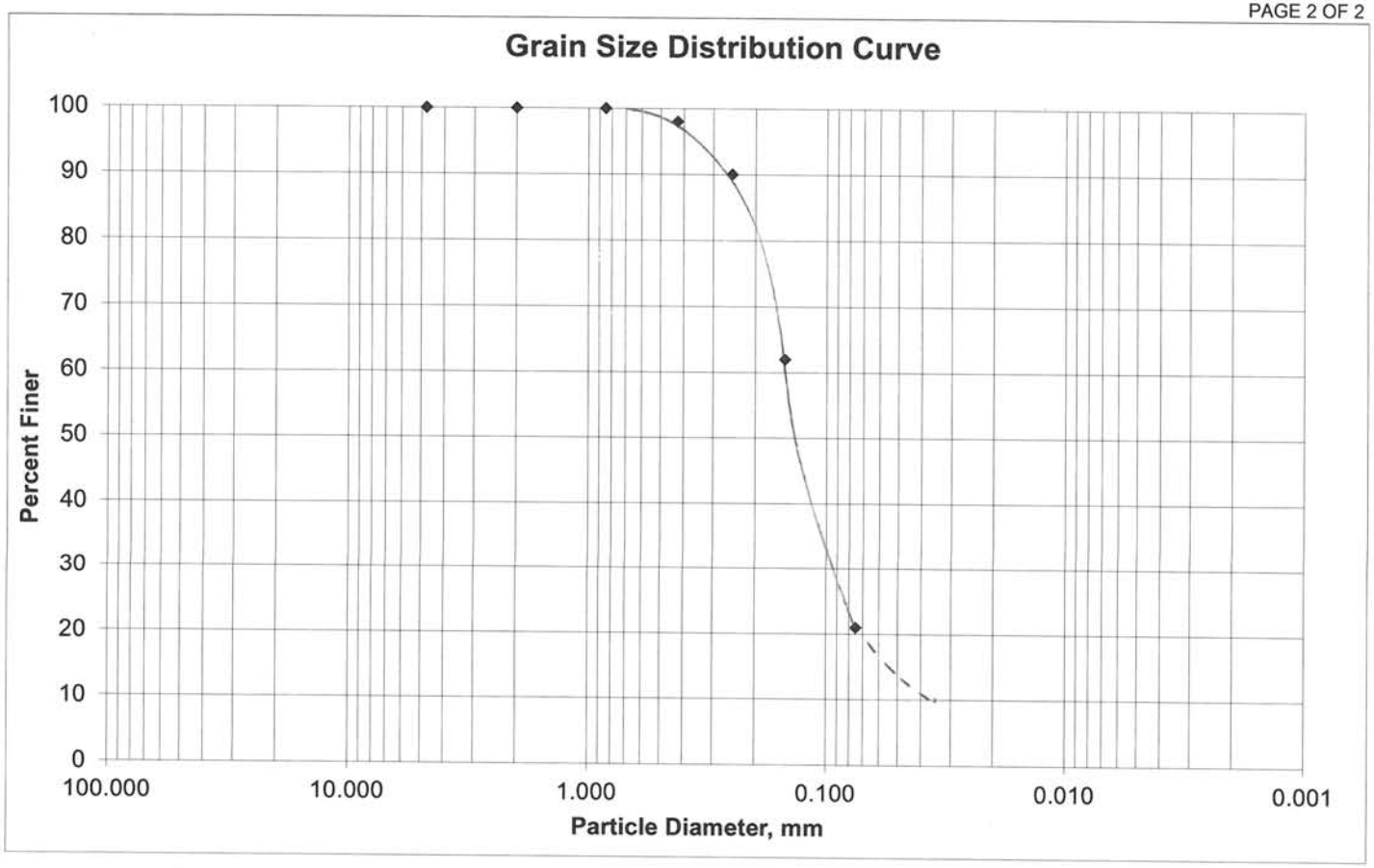
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-7 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	91
100	0.150	69
200	0.075	33

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.026 mm

D_{50} = 0.12 mm

D_{60} = 0.15 mm

K = 0.0005 (cm/sec)

0.7 (in/hr)

C_u = 5.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

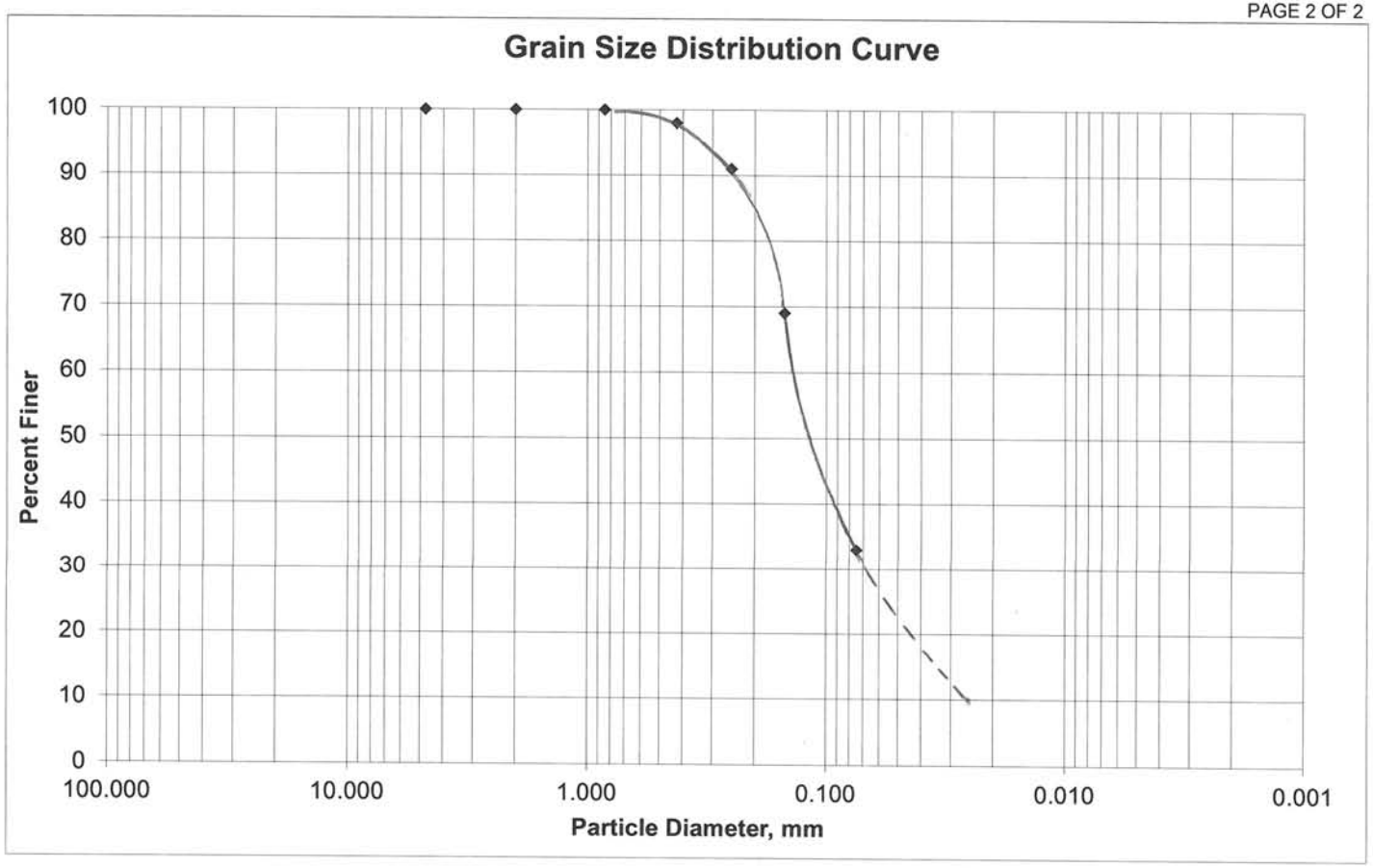
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-12 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	66
200	0.075	26

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.029 mm

D_{50} = 0.14 mm

D_{60} = 0.16 mm

K = 0.0008 (cm/sec)

1.1 (in/hr)

C_u = 5.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

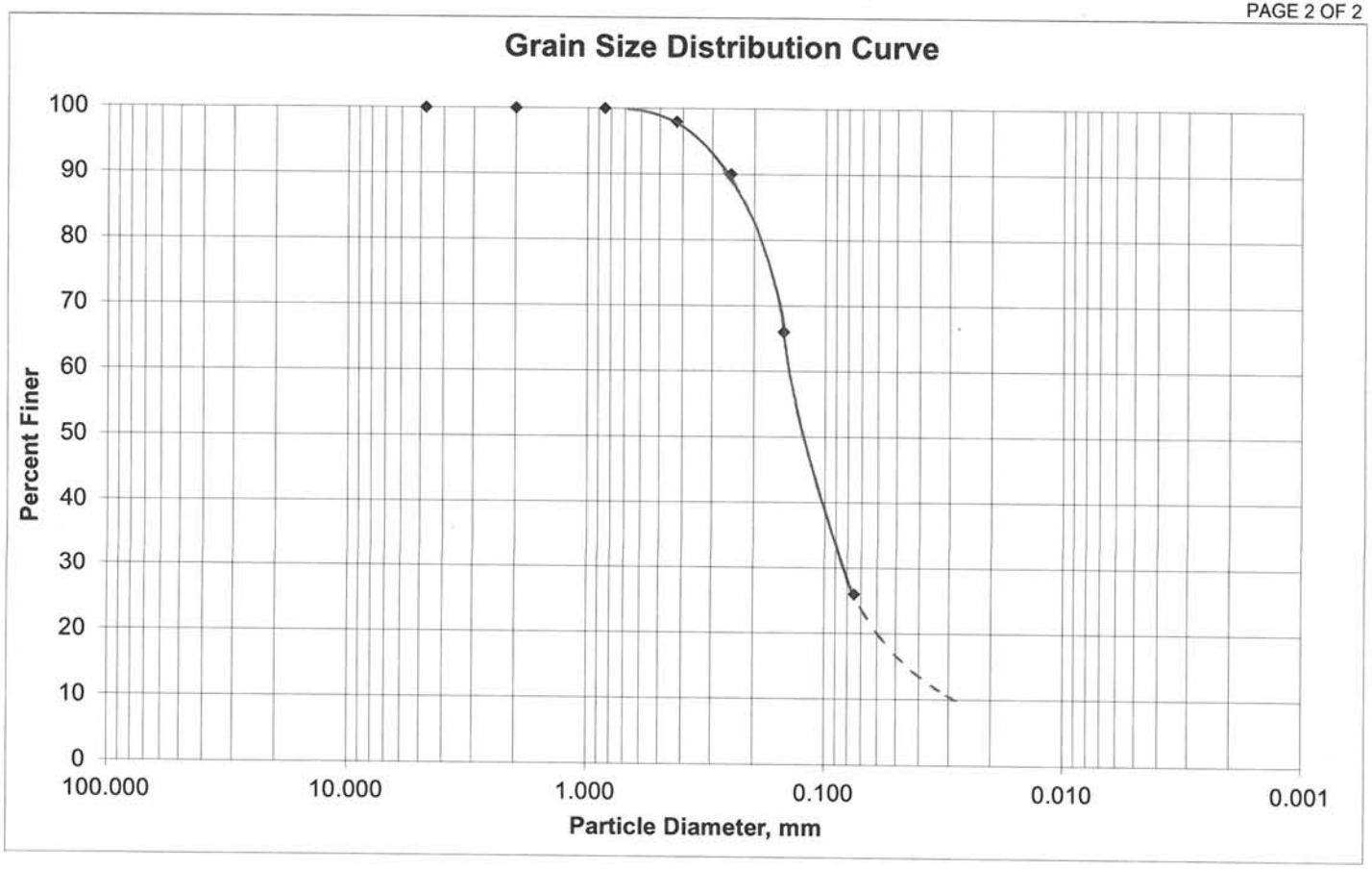
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-12 **DEPTH:** 1.0-1.5 (FEET)

SOIL DESCRIPTION: BROWN SILTY FINE SAND
SM / A-2-4 (STRATUM 1)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

STRATUM 2

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-1 **DEPTH:** 17.5-19.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	100
60	0.250	99
100	0.150	92
200	0.075	27

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.020 mm

D_{50} = 0.09 mm

D_{60} = 0.09 mm

K = 0.0005 (cm/sec)

0.7 (in/hr)

C_u = 4.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

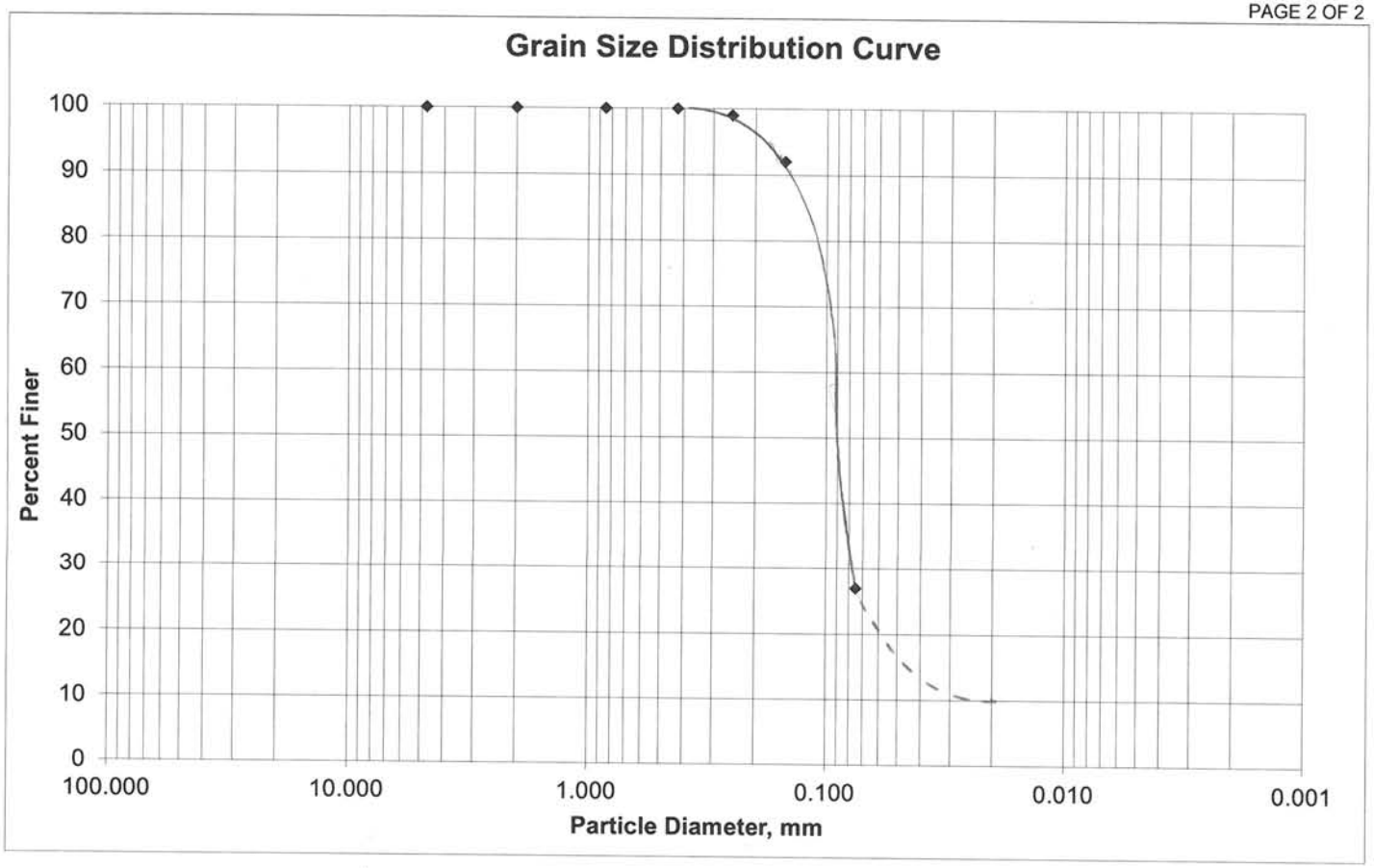
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-1 **DEPTH:** 17.5-19.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 23.0-25.0 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	88
100	0.150	49
200	0.075	26

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.030 mm

D_{50} = 0.14 mm

D_{60} = 0.20 mm

K = 0.0004 (cm/sec)

0.6 (in/hr)

C_u = 6.7

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

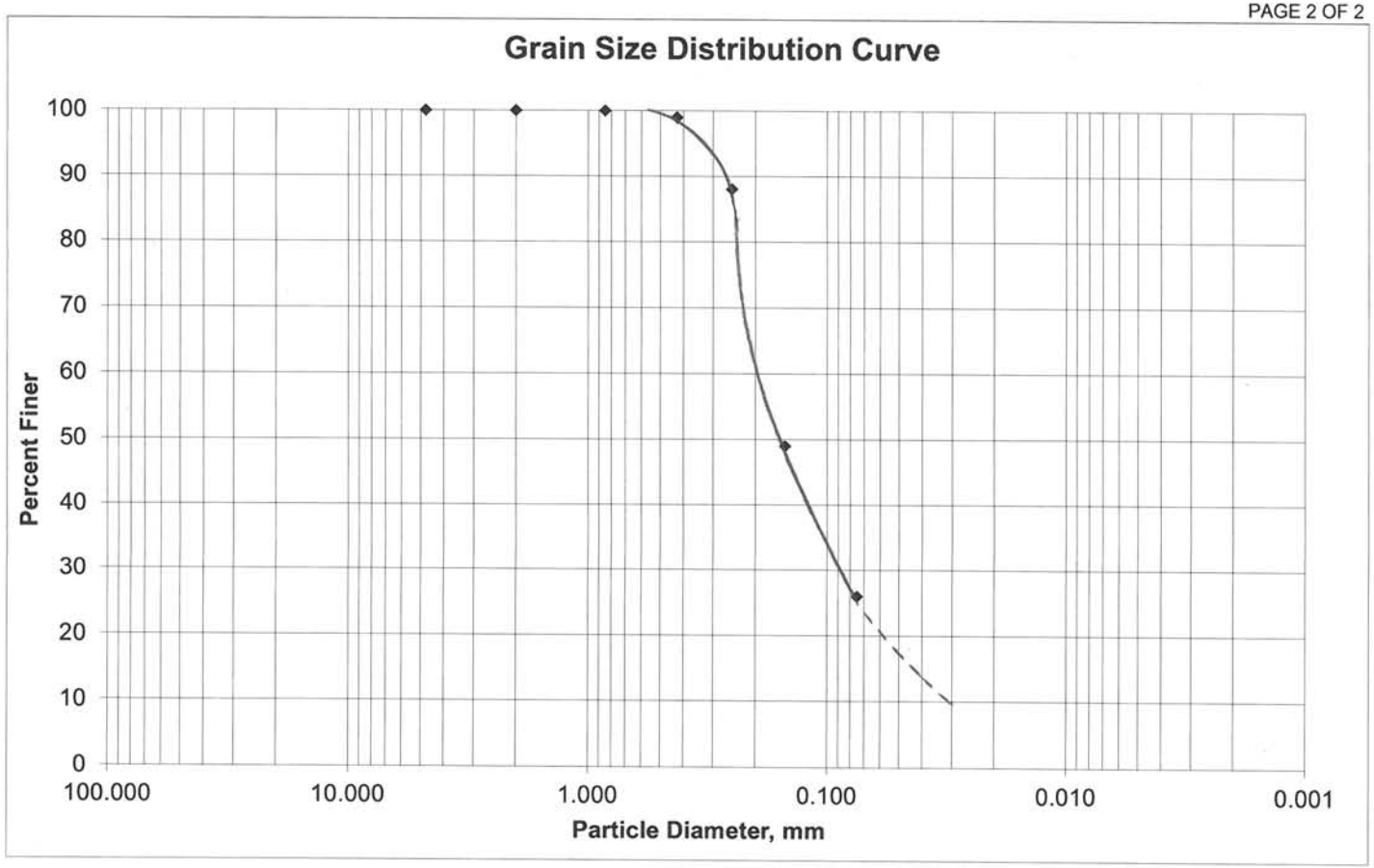
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 23.0-25.0 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 2.0-2.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	91
100	0.150	67
200	0.075	33

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.026 mm

D_{50} = 0.12 mm

D_{60} = 0.15 mm

K = 0.0003 (cm/sec)

0.4 (in/hr)

C_u = 5.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

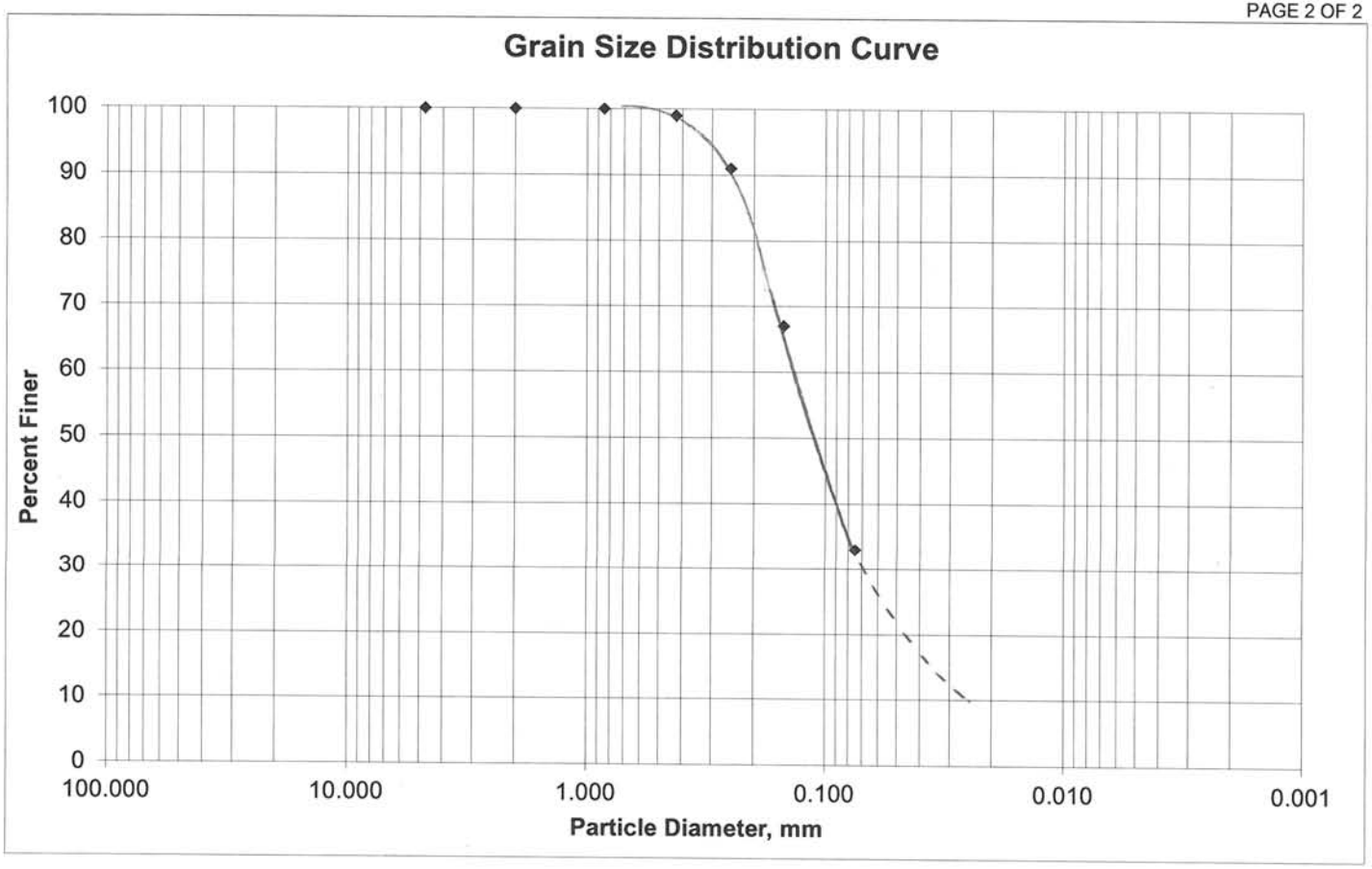
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-13 **DEPTH:** 2.0-2.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY FINE SAND
SC / A-2-6 (STRATUM 2)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

STRATUM 3

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 15.0-16.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	96
60	0.250	84
100	0.150	59
200	0.075	36

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.024 mm

D_{50} = 0.13 mm

D_{60} = 0.16 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 6.7

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

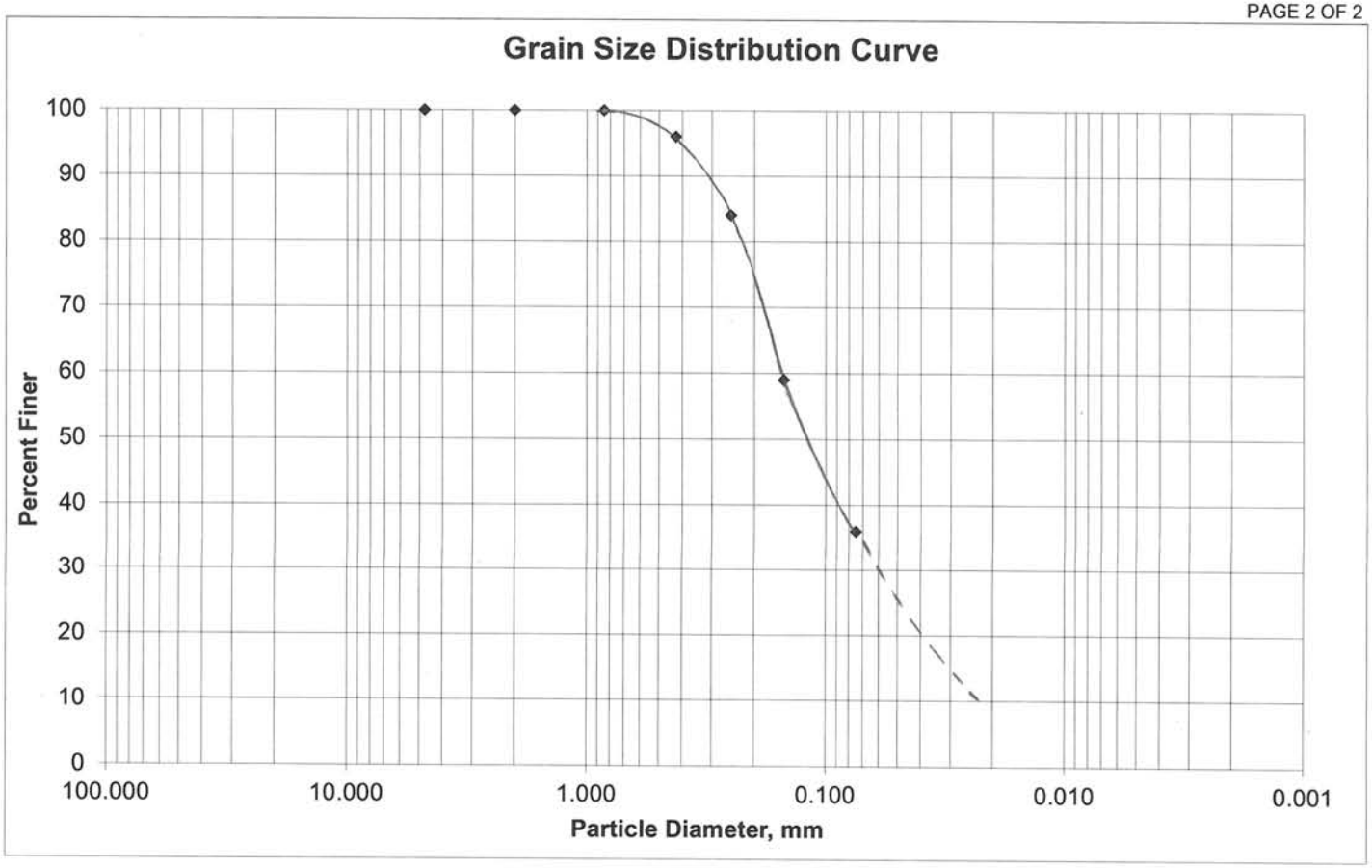
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-11 **DEPTH:** 15.0-16.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-8 **DEPTH:** 7.5-9.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	91
100	0.150	65
200	0.075	40

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.022 mm

D_{50} = 0.11 mm

D_{60} = 0.15 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 6.8

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

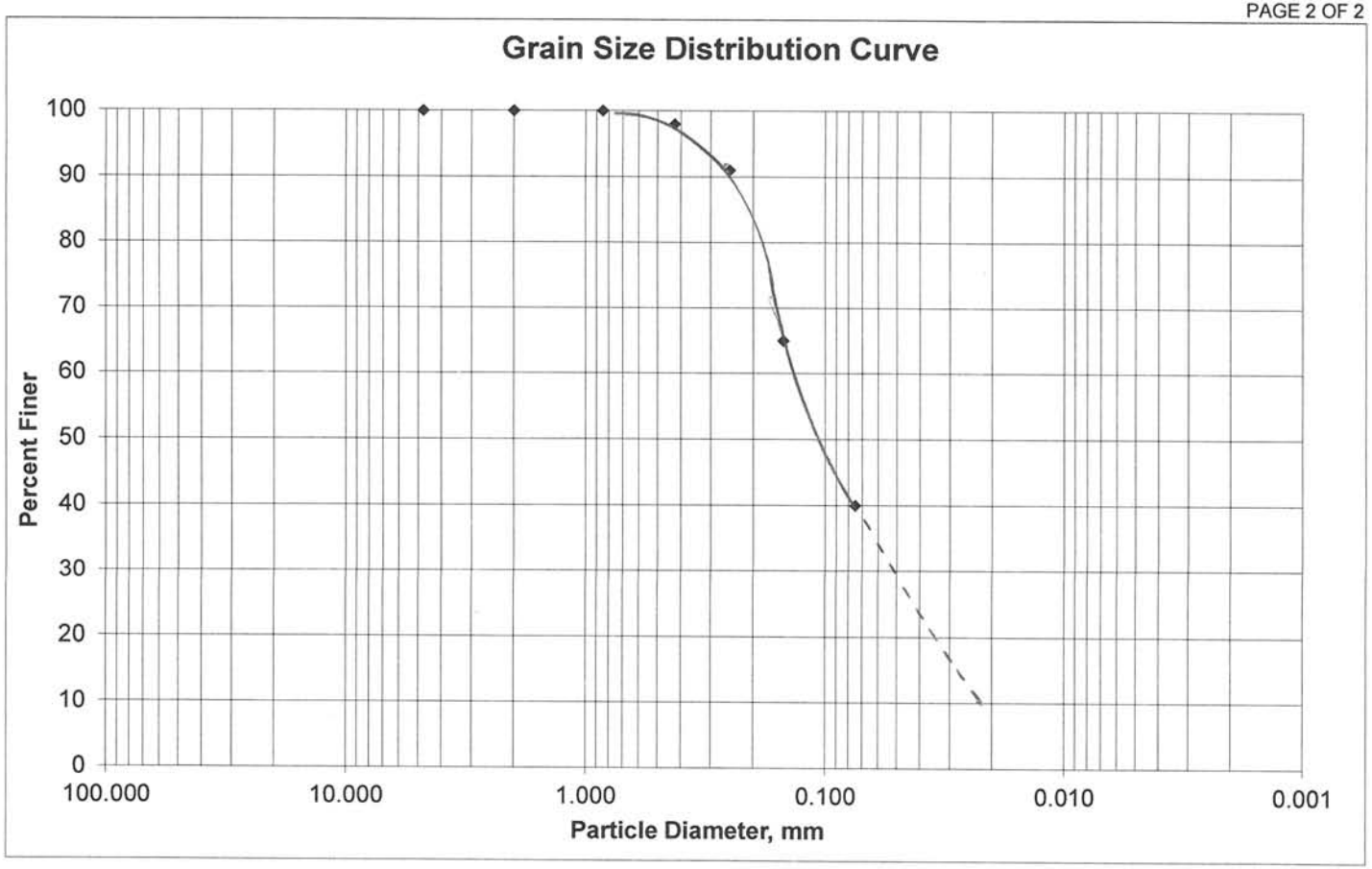
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-8 **DEPTH:** 7.5-9.0 (FEET)

SOIL DESCRIPTION: GRAY CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	90
100	0.150	69
200	0.075	44

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.023 mm

D_{50} = 0.09 mm

D_{60} = 0.12 mm

K = 0.0002 (cm/sec)

0.2 (in/hr)

C_u = 5.2

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

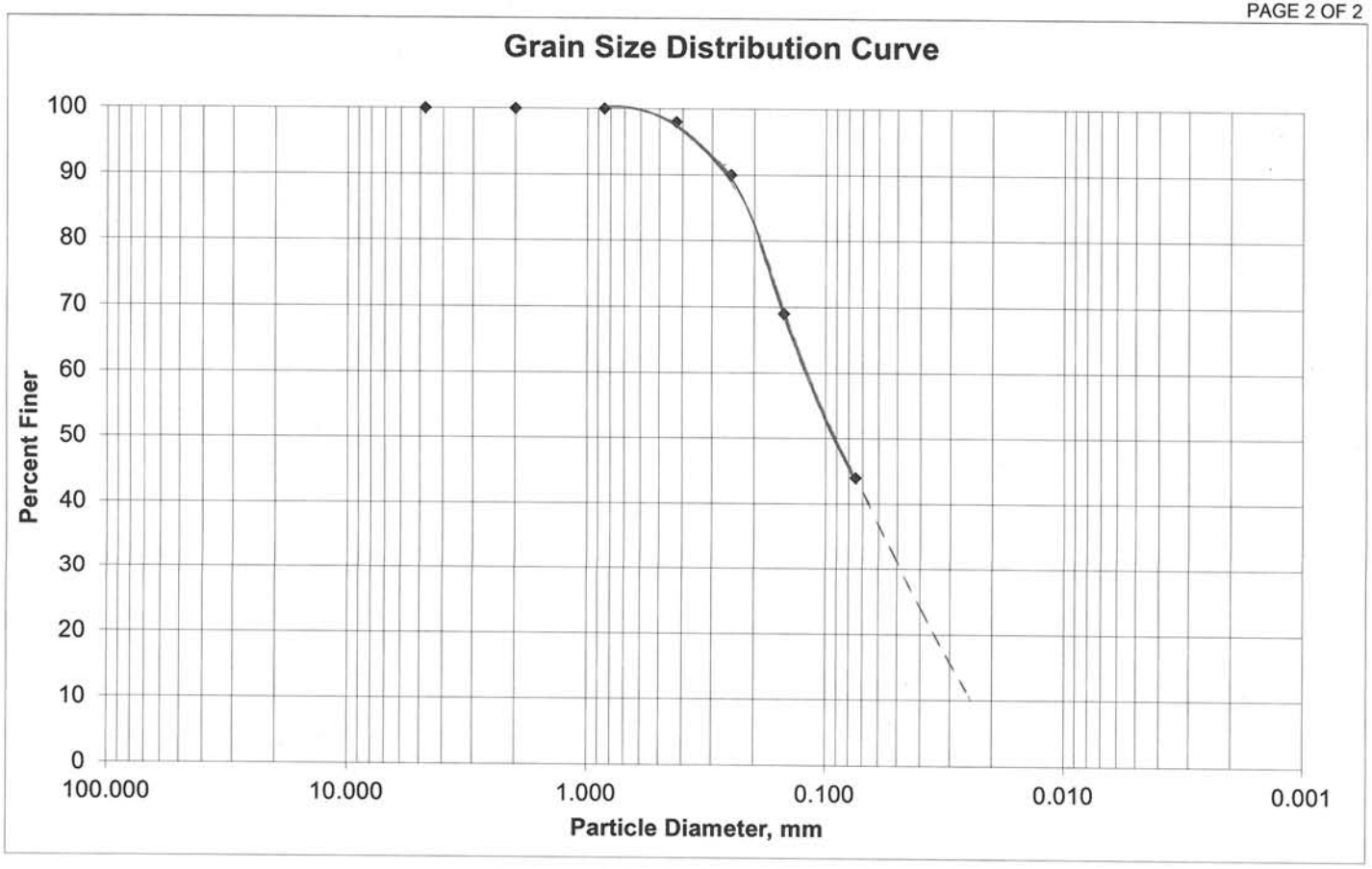
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 12.0-12.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	99
60	0.250	93
100	0.150	70
200	0.075	47

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.023 mm

D_{50} = 0.09 mm

D_{60} = 0.12 mm

K = 0.0001 (cm/sec)

0.1 (in/hr)

C_u = 5.2

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

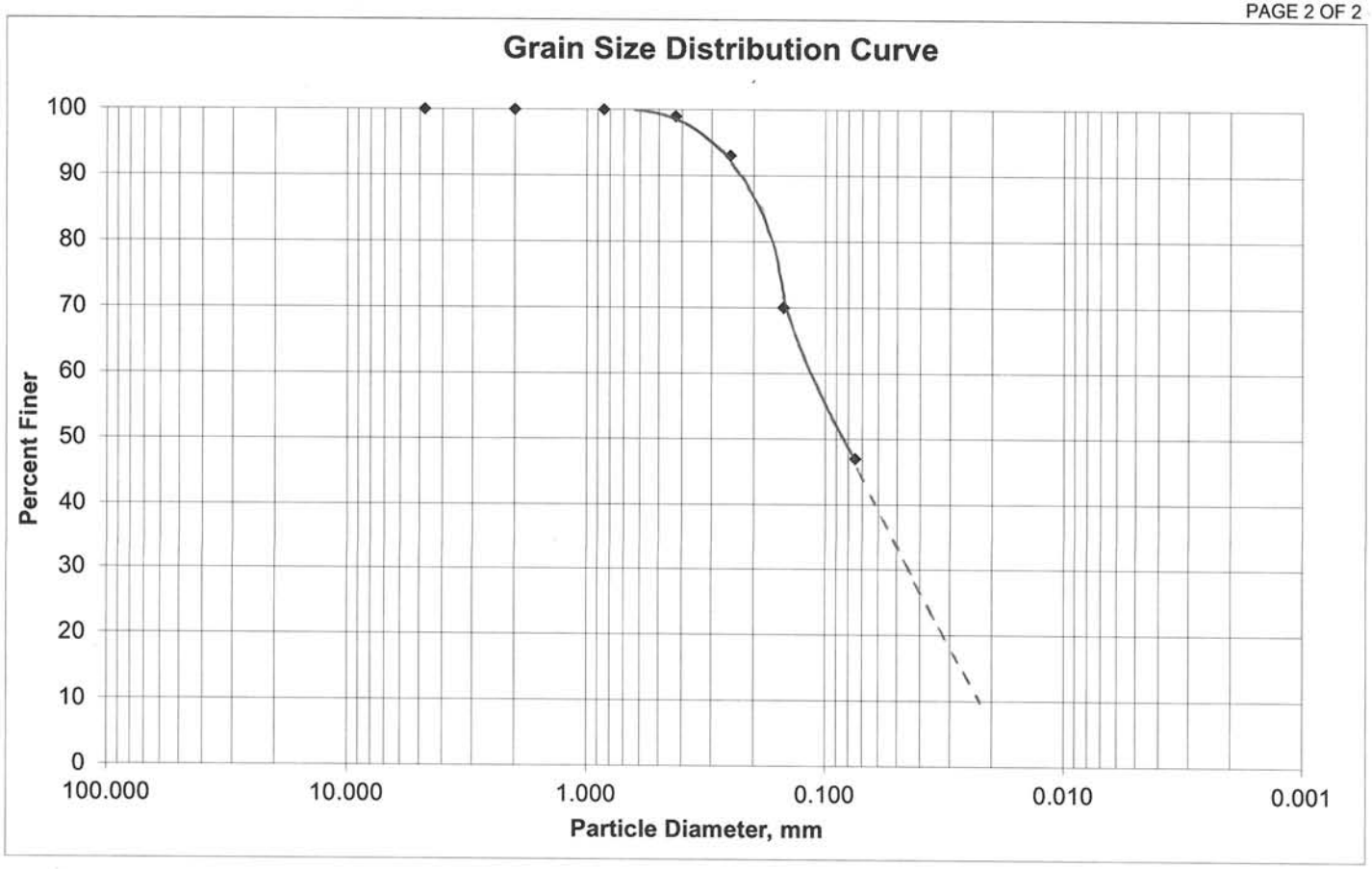
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-17 **DEPTH:** 12.0-12.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

TEST INFORMATION:

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-16 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

TEST RESULTS:

Sieve No.	Diameter (Millimeters)	Percent Passing (%)
4	4.750	100
10	2.000	100
20	0.850	100
40	0.425	98
60	0.250	92
100	0.150	70
200	0.075	49

NOTE: THE FOLLOWING VALUES ARE ESTIMATED FROM THE GRAIN-SIZE DATA

D_{10} = 0.020 mm

D_{50} = 0.09 mm

D_{60} = 0.13 mm

K = 0.0001 (cm/sec)

0.1 (in/hr)

C_u = 6.5

Where:
K = Coefficient of Permeability
Cu = Coefficient Of Uniformity

MECHANICAL GRAIN-SIZE ANALYSIS
(ASTM D1140-54)

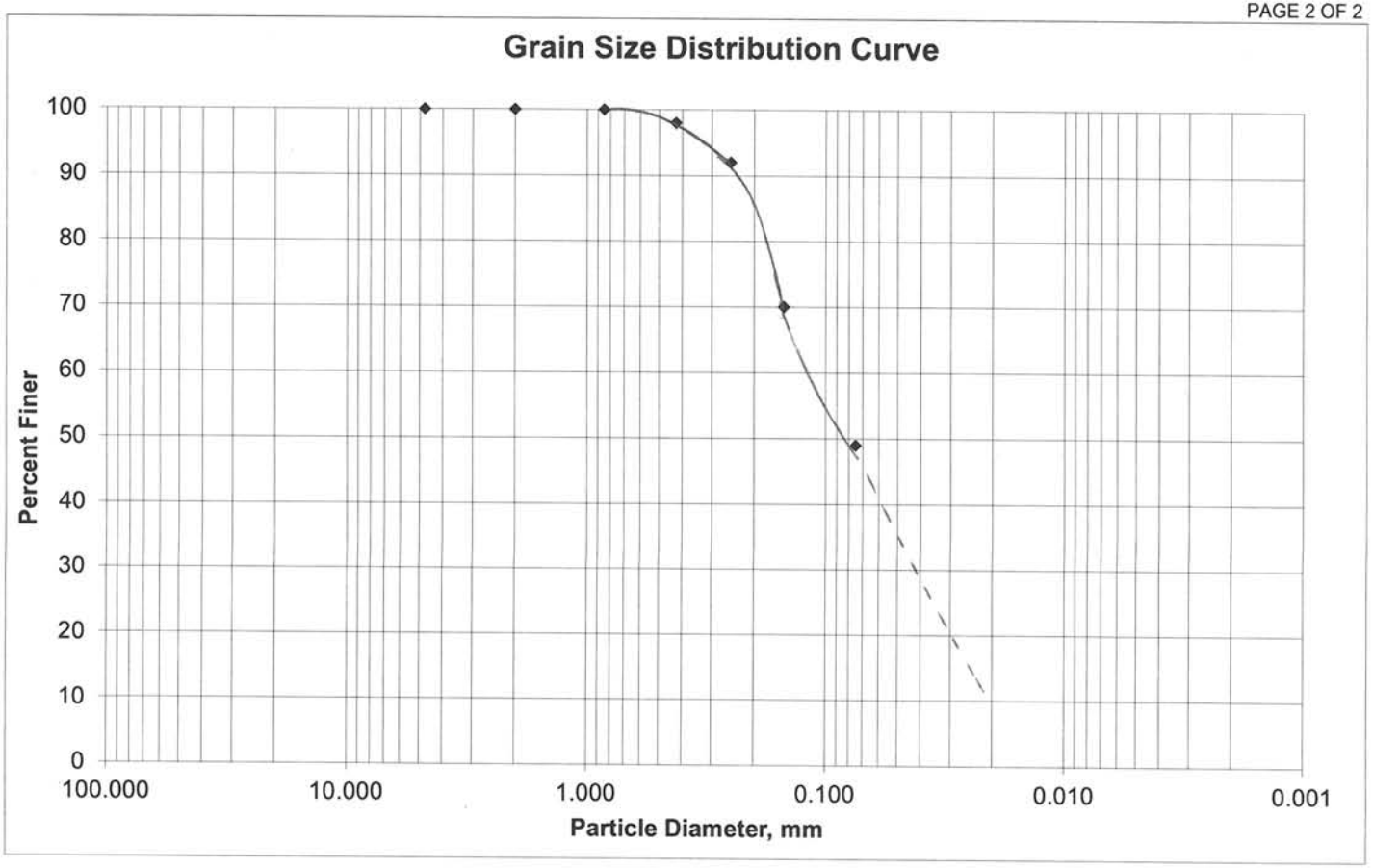
TEST INFORMATION

PROJECT NO.: 23-59-10-01 **DATE:** 5/31/2011

BORING NO.: PB-16 **DEPTH:** 5.0-5.5 (FEET)

SOIL DESCRIPTION: BROWN CLAYEY SAND
SC / A-6 (STRATUM 3)

GRAPHICAL REPRESENTATION OF TEST RESULTS



ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

Appendix D

Noise Study Tech Memo

RS&H
IMPROVING YOUR WORLD
Reynolds, Smith and Hills, Inc.

TECHNICAL MEMORANDUM

Reynolds, Smith and Hills, Inc.
Architectural, Engineering, Planning and Environmental Services

To:	George Su, PE Project Manager	**Date:**	July 25, 2011
Project:	Bannerman Road Corridor Study Leon County, Florida	**Work Order No:**	BC-04-29-09-28
From:	Brian Kirkpatrick, PE, RS&H Nick Arnio, PE, PTOE	**Copies to:**	File
Purpose:	**Bannerman Road Noise Study Analysis Results**		

As part of the Bannerman Road Corridor Study, a traffic noise study was conducted in accordance with the FDOT's Project Development and Environment Manual, Chapter 17, "Noise" and with Title 23 CFR (Code of Federal Regulations) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. Based on the Preferred Built Alternative for Bannerman Road, only Segment 3 (Tekesta Drive to Thomasville Road) involves widening to a four-lane facility. Therefore, this noise study was conducted for Segment 3 only. This technical memorandum documents the findings of the study.

1.0 TRAFFIC NOISE ANALYSIS

The results of the traffic noise analysis are presented in this memorandum and included the following steps:

- Identification of Noise Sensitive Receptors;
- Field Measurement of Noise Levels and Noise Model Validation;
- Prediction of Existing and Future Noise Levels;
- Assessment of Traffic Noise and Vibration Impacts;
- Development of 66-dBA Noise Contours; and
- Consideration of Noise Abatement Measures.

For this project, FHWA's Traffic Noise Model (TNM) Version 2.5 (April 2004) was used to predict traffic noise levels at representative noise sensitive receptor sites. This model estimates the acoustic intensity at a noise sensitive receptor generated by a series of roadway segments (the source). Model-predicted noise levels are influenced by several factors, such as vehicle speed and distribution of vehicle types. Noise levels are also affected by characteristics of the source-to-receptor path, including the effects of

intervening barriers, structures (houses, trees, etc.), ground surface type (hard or soft), and topography.
Noise levels documented in this memorandum represent the hourly equivalent sound level (LAeq1h). LAeq1h is the steady-state sound level, which contains the same amount of acoustic energy as the actual time-varying sound level over a one-hour period. LAeq1h is measured in A-weighted decibels (dBA), which closely approximate the human frequency response.

1.1 NOISE SENSITIVE RECEPTORS

The FHWA has developed noise abatement criteria (NAC) to determine the levels of traffic noise impact on human activity. Five land use activity categories have been identified for use in noise impact analysis. The NAC levels for these categories are presented in **Table 1** and apply only to areas of frequent human use where lowered noise levels are desirable.

Noise abatement measures must be considered when predicted noise levels approach (i.e., within 1 dBA) or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dBA or more as a result of the transportation improvement project.

A survey of the project corridor was conducted to identify the noise sensitive receptors that may be impacted by traffic noise associated with the proposed improvements. Noise sensitive receptors represent any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. Typical noise sensitive receptors include residences, parks, schools, hospitals, and churches.

The Bannerman Road (Segment 3) study area includes a number of noise sensitive sites including single family residences, churches and a community center (the Historic Bradfordville Schoolhouse). To facilitate the analysis of traffic noise impacts in these areas, a total of 73 noise receptors (57 receptors located northeast of Bannerman Road, and 16 located southwest) were identified and modeled based on noise sensitivity and roadway proximity.

All 73 representative noise receptor sites are classified under Activity Category B or C of the FHWA's NAC. For Activity Category B or C, noise abatement measures must be considered when predicted noise levels approach or exceed the 67 dBA NAC or when a substantial noise increase (i.e., 15 dBA) occurs.

Table 1. Noise Abatement Criteria [Hourly A-Weighted Sound Level-decibels (dB(A))]

Activity Category	Activity Leq(h)[1]		Evaluation Location	Description of Activity Category
	FHWA	FDOT		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	66	Exterior	Residential
C[2]	67	66	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	_	_	_	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	_	_	_	Undeveloped lands that are not permitted.

(Based on Table 1 of 23 CFR Part 772)

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not a design standard for noise abatement measures.

[2] Includes undeveloped lands permitted for this activity category.

Note: FDOT defines that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 decibels or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

1.2 FIELD MEASUREMENT OF NOISE LEVELS AND MODEL VALIDATION

Noise measurements were taken at representative sites along the project corridor. Noise monitoring was conducted on March 16, and March 17, 2011. The purpose of the monitoring was to document existing noise sources, determine if computer-predicted noise levels are representative of actual existing levels along Bannerman Road, and to validate the noise model for predicting existing and future noise levels. Noise measurements were recorded at five sites along Bannerman Road in Segment 3. The noise level monitoring was completed using Larson-Davis Model 870 sound-level analyzers, in accordance with the methodology established by the FHWA and documented in Report No. DP-96-046, Measurement of Highway-Related Noise: Final Report, May 1996. The A-weighted frequency scale was used and the sound meter was calibrated to 114 dBA (A-weighted decibels) using a Larson-Davis Model CA250 sound-level calibrator. At each site, monitoring was conducted for two or three ten-minute intervals with the microphone approximately five feet above the land surface.

Community noises and traffic information, such as the number of passenger cars and trucks and average speeds, were also collected at the time of noise monitoring. A K15-K Doppler Radar Gun was used to obtain average operating speeds for cars, medium trucks, and heavy trucks. Since all noise levels in this report are based on a one-hour period, the field-recorded traffic volumes were adjusted upward to reflect hourly volumes. The collected data was then used as input to TNM. Traffic noise was the dominant noise source in this area.

To validate the computer noise model, the TNM-predicted noise levels were compared to measured noise levels. When measured noise levels are within +/- 3.0 dBA of the computer predicted levels, the model is considered validated. At each of the five monitoring sites, the monitored noise levels were within +/- 3.0 dBA of the TNM predicted levels. The validated measured noise levels were 1.9 dBA higher to 2.7 dBA lower than those predicted by TNM. Because the TNM-predicted noise levels were within +/- 3.0 dBA of the measured noise levels, the model has been verified and is acceptable for predicting existing and future traffic noise levels along Bannerman Road.

1.3 PREDICTED NOISE LEVELS

TNM was used to predict traffic noise levels at the 73 noise sensitive sites located along the project corridor that are potentially affected by traffic noise associated with the project. Traffic noise levels for the Existing Conditions/No-Build Alternative and Build Alternative were predicted at the edge of the dwelling units and at areas of recreational use closest to the travel lanes

1.3.1 Traffic Data

The traffic data used in the prediction of noise levels for Existing Conditions/No-Build Alternative and Preferred Build Alternative consisted of the least of either: 1) the traffic capacity of the roadway at LOS “C” or 2) the projected peak hour traffic demand of the

roadway. These traffic volumes can be expected to produce the noisiest traffic conditions likely to occur during the design year. For the Existing Conditions/No-Build Alternative, LOS "C" volumes were used to predict worst-case conditions, while peak hour traffic demand volumes were used for the Preferred Build Alternative analysis.

1.3.2 Predicted Traffic Noise Levels

Traffic noise levels at the 73 representative noise sensitive receptors for the Existing Conditions/No-Build Alternative and the four-lane Preferred Build Alternative were predicted using TNM. The predicted noise levels for the Existing Conditions/No-Build Alternative range from 47.6 dBA to 61.1 dBA. None of the predicted noise levels approach or exceed the FHWA's NAC of 67 dBA.

For the Preferred Build Alternative, design year noise levels are predicted to range from 51.5 dBA to 64.4 dBA. None of the predicted noise levels approach or exceed the FHWA's NAC of 67 dBA. The highest predicted traffic noise level, 64.4 dBA, is predicted to occur at receptor sites N1 and N46. Receptor sites N1 and N46 both represent single family residences located northeast of Bannerman Road within 100 feet of the proposed travel lanes.

A sampling of the 73 noise receptor sites, along with their TNM-predicted noise levels, is shown in **Table 2**. The noise receptors on both sides of Bannerman Road in closest proximity to the proposed travel lanes (i.e., Receptors N46 and S9) were included in **Table 2** to reveal the highest predicted noise levels on both sides of Bannerman Road.

Table 2. Predicted Noise Levels

Receptor Name	Receptor Location (Address)	Distance to Nearest Travel Lane in Feet (Existing/ Proposed)	TNM-Predicted Noise Levels (dBA)		
			Existing/No Build Noise Level	Preferred Build Alternative Noise Level	Increase in Noise Level with Project
N20	7100 Summit Ridge Drive	101/101	58.9	62.1	3.2
N38	3423 Treaty Oak Trail	140/140	57.2	60.8	3.6
N46*	3523 Cherokee Ridge Trail	85/85	61.1	64.4	3.2
S3	7914 McClure Drive	152/106	56.1	61.3	5.2
S9**	7066 Standing Pines Lane	151/105	56.0	62.5	6.5

* Receptor N46 is the closest receptor (on the northeast side) to the proposed travel lanes (i.e., 85 feet).
** Receptor S9 is the closest receptor (on the southwest side) to the proposed travel lanes (i.e., 105 feet).

1.4 NOISE IMPACT ANALYSIS

Predicted design year noise levels for the four-lane Preferred Build Alternative were compared to the NAC and to the predicted levels for the Existing Conditions to assess potential noise impacts associated with the proposed project. Design year (2035) noise levels associated with the four-lane Preferred Build Alternative are not predicted to approach or exceed the NAC of 67 dBA at any of the 73 noise sensitive receptor sites. In addition, none of the 73 noise sensitive receptors will experience a substantial noise increase of 15 dBA or more.

1.5 NOISE ABATEMENT MEASURES

When traffic noise associated with a proposed project is predicted to approach or exceed FHWA's NAC, noise abatement must be considered. For the Preferred Build Alternative, no noise sensitive receptor sites are predicted to approach or exceed the FHWA's NAC. Therefore, the feasibility of noise abatement measures was not warranted or considered necessary for this project.

2.0 CONSTRUCTION NOISE AND VIBRATION

During construction of the project, there is the potential for noise impacts to be substantially greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project area does include residential areas that may be affected by noise and vibration associated with construction activities. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction.

3.0 COORDINATION WITH LOCAL AGENCIES

Coordination with local agencies and officials has been accomplished during the development of this project. In addition, local and community officials have had the opportunity to comment on the proposed project at the public meetings. To aid local agencies in promoting land use compatibility, a generalized future noise impact contour distance has been developed for the properties in the immediate vicinity of the project. This contour distance represents the approximate distance from the edge of the nearest travel lane of Bannerman Road to the limits of the area predicted to approach or exceed the FHWA's NAC of 67 dBA in the design year 2035. The distance to the 66-dBA contour line is approximately 70 feet based on the Preferred Build Alternative. This contour distance does not include or assume any traffic noise shielding effects of vegetation or other obstructions such as buildings. To minimize the potential for land use incompatibility, noise sensitive land uses (e.g., residential) should be located beyond this distance.

Appendix E

Air Quality Tech Memo

AIR QUALITY TECHNICAL MEMORANDUM

Date: July 29, 2011
To: Leon County

Prepared by: Brian Kirkpatrick, PE
Title: Transportation Engineer, Reynolds, Smith and Hills, Inc.

Subject: AIR QUALITY SCREENING TEST
Bannerman Road Corridor Study
From N. Meridian Road to Thomasville Road
Work Order No.: BC-04-29-09-28
Leon County, Florida

The referenced proposed project is located in Leon County which is currently designated as being attainment for the following criteria air pollutants: ozone/nitrogen dioxide/particulate matter (2.5 microns in size and 10 microns in size)/sulfur dioxide/carbon monoxide/lead.

The project alternatives were subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. The Florida Department of Transportation's (FDOT's) screening model, CO Florida 2004 (released September 7, 2004) uses the latest United States Environmental Protection Agency (USEPA)-approved software (*MOBILE6 and CAL3QHC*) to produce estimates of one-hour and eight-hour CO concentrations at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one- and eight-hour *National Ambient Air Quality Standards (NAAQS)* for CO that are 35 parts per million (ppm) and 9 parts per million (ppm), respectively.

The roadway intersection forecast to have the highest total approach traffic volume is Bannerman Road at Thomasville Road. At this intersection, traffic volumes associated with the Build and No-Build scenarios are projected to be equivalent. The Build/No-Build traffic scenario for the design year (2035) was evaluated. Opening year traffic data was not available. The traffic data used in the evaluation is attached to this memorandum.

Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the edge of the roadway. Based on the results from the screening model, the highest project-related CO one- and eight-hour levels are not predicted to meet or exceed the one- or eight-hour *National Ambient Air Quality Standards (NAAQS)* for this pollutant with either the No-Build or Build Alternatives. As such, the project "passes" the screening model. The results of the screening model are attached to this memorandum.

The project is located in an area which is designated attainment for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act. Therefore, the Clean Air Act conformity requirements do not apply to the project.

Construction activities will cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to all applicable State and local regulations and to the FDOT standard Specifications for Road and Bridge Construction.

TRAFFIC DATA FOR AIR QUALITY ANALYSIS

Work Order No.: BC-04-29-09-28
Project Description: Bannerman Road Corridor Study
From N. Meridian Road to Thomasville Road
Leon County, Florida

Traffic Data for Bannerman Road and Thomasville Road Signalized Intersection

Project Scenario	Project Alternative	Roadway Segment (Number of Approach Through Lanes)	Design Hour Intersection Approach Volume	Intersection Approach Speed (miles per hour)
Design Year (2035)	Build and No Build Alternatives	Bannerman Rd Eastbound (1 Lane)	855	45
		Bannerman Rd Westbound (2 Lanes)	744	45
		Thomasville Rd Southbound (3 Lanes)	947	45
		Thomasville Rd Northbound (3 Lanes)	2,731	45

AIR QUALITY SCREENING MODEL RESULTS
CO Florida 2004 (Version 2.0.5)

CO Florida 2004

Project: Bannerman Corridor Study
Facility: Bannerman Road
Analyst: Kirkpatrick

Environmental Data:

Temperature:	41 F
Reid Vapor Pressure:	11.5 psi
Land Use:	Suburban
Stability Class:	D
Surface Roughness:	108
Background Concentration:	1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region:	1: North Florida
Year:	2035
Intersection Type:	6 x 4 Intersection
Max 4-Lane Traffic:	855 veh/hour
Max 6-Lane Traffic:	2731 veh/hour
4-Lane Speed:	45
6-Lane Speed:	45

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	150	6
Default Rec 2	10	50	6
Default Rec 3	50	10	6
Default Rec 4	150	10	6
Default Rec 5	50	50	6
Default Rec 6	10	-150	6
Default Rec 7	10	-50	6
Default Rec 8	50	-10	6
Default Rec 9	150	-10	6
Default Rec 10	50	-50	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	6.0	3.6
Default Rec 2	7.1	4.3
Default Rec 3	8.4	5.1
Default Rec 4	8.6	5.2
Default Rec 5	6.7	4.0
Default Rec 6	6.4	3.9
Default Rec 7	7.7	4.6
Default Rec 8	8.3	5.0
Default Rec 9	7.6	4.6
Default Rec 10	7.1	4.3

****
PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED
****

Appendix F

Leon County Species

FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
LEON COUNTY FLORIDA
Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
FISH:				
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	SSC	T CH	ESTUARINE: various MARINE: various habitats RIVERINE: alluvial and blackwater streams
Suwannee bass	*Micropterus notius*	SSC		RIVERINE: alluvial stream, blackwater stream, spring-run stream
AMPHIBIANS & REPTILES:				
Eastern indigo snake	*Drymarchon couperi*	T	T	ESTUARINE: tidal swamp PALUSTRINE: hydric hammock, wet flatwoods TERRESTRIAL: mesic flatwoods, upland pine forest, sandhills, scrub, scrubby flatwoods, rockland hammock, ruderal
Striped newt	*Notophthalmus perstriatus*	SSC	C	TERRESTRIAL: sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand
Gopher tortoise	*Gopherus polyphemus*	SSC	ce	TERRESTRIAL: sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand, ruderal
Alligator snapping turtle	*Macroclemys temminckii*	SSC	ce	ESTUARINE: tidal marsh LACUSTRINE: river floodplain lake, swamp lake RIVERINE: alluvial stream, blackwater stream
Florida pine snake	*Pituophis melanoleucus mugitus*	SSC	ce	LACUSTRINE: ruderal, sandhill upland lake TERRESTRIAL: sandhill, scrubby flatwoods, xeric hammock, ruderal
Suwannee cooter	*Pseudemys concinna suwanniensis*	SSC		RIVERINE: alluvial stream, blackwater stream, spring-fed stream
Gopher frog	*Rana capito*	SSC	ce	TERRESTRIAL: sandhill, scrub, scrubby flatwoods, xeric hammock (reproduces in ephemeral wetlands within these communities)
BIRDS:				
Bald eagle	*Haliaeetus leucocephalus*		BGEPA	ESTUARINE: marsh edges, tidal swamp, open water LACUSTRINE: swamp lakes, edges PALUSTRINE: swamp, floodplain RIVERINE: shoreline, open water TERRESTRIAL: pine and hardwood forests, clearings
Wood stork	*Mycteria americana*	E	E	ESTUARINE: marshes LACUSTRINE: floodplain lakes, marshes (feeding), various PALUSTRINE: marshes, swamps, various
Red-cockaded woodpecker	*Picoides borealis*	SSC	E	TERRESTRIAL: mature pine forests
Bachman's sparrow	*Aimophila aestivalis*		ce	TERRESTRIAL: various, ruderal
Limpkin	*Aramus guarauna*	SSC		LACUSTRINE: various PALUSTRINE: various RIVERINE: various
Little blue heron	*Egretta caerulea*	SSC		ESTUARINE: marshes, shoreline PALUSTRINE: floodplains, swamps RIVERINE: shoreline

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FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
LEON COUNTY FLORIDA
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Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Snowy egret	*Egretta thula*	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Tricolored heron	*Egretta tricolor*	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Arctic peregrine falcon	*Falco peregrinus tundrius*	E	ce	ESTUARINE: winters along coasts LACUSTRINE: various PALUSTRINE: various TERRESTRIAL: various, ruderal
Southeastern kestrel	*Falco sparverius paulus*	T	ce	ESTUARINE: various habitats PALUSTRINE: various habitats TERRESTRIAL: open pine forests, clearings, ruderal, various
Black skimmer	*Rynchops niger*	SSC		ESTUARINE: various LACUSTRINE: various RIVERINE: various TERRESTRIAL: ocean beaches, beach dune, ruderal. Nests common on rooftops.
Least tern	*Sterna antillarum*	T		ESTUARINE: various LACUSTRINE: various RIVERINE: various TERRESTRIAL: beach dune, ruderal. Nests common on rooftops.
MAMMALS:				
Gray bat	*Myotis grisescens*	E	E	PALUSTRINE: caves, various TERRESTRIAL: caves, various
Round-tailed muskrat	*Neofiber alleni*		ce	ESTUARINE: tidal marsh LACUSTRINE: marsh lake, flatwoods/prairie lake PALUSTRINE: floodplain marsh, swale, depression marsh, basin marsh
Southeastern big-eared bat	*Plecotus rafinesquii*		ce	PALUSTRINE: various, floodplains TERRESTRIAL: pine and hardwood forests, ruderal, various
Southeastern shrew	*Sorex longirostris longirostris*	SSC	ce	PALUSTRINE: floodplain forest, floodplain swamp
Florida black bear	*Ursus americanus floridanus*	T	ce	PALUSTRINE: titi swamps, floodplains TERRESTRIAL: pine and hardwood forests
INVERTEBRATES:				
Purple bankclimber (mussel)	*Elliptoideus sloatianus*		T CH	RIVERINE: small to large rivers in slow to moderate currents over sand, sand mixed with mud, or gravel substrates (Panhandle watersheds: Apalachicola, Ochlockonee)
Shinyrayed pocketbook (mussel)	*Hamiota subangulata*		E CH	RIVERINE: medium-sized creeks to mainstem rivers; clean or silty sand substrates, in slow to moderate currents (Panhandle watersheds: Chipola, Ochlockonee upstream of Lake Talquin)

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Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Ochlockonee moccasinshell (mussel)	*Medionidus simpsonianus*		E CH	RIVERINE: large creeks to medium-sized rivers in substrates of sand with some gravel in moderate current (Panhandle watersheds: Ochlockonee upstream of Lake Talquin)
Oval pigtoe (mussel)	*Pleurobema pyriforme*		E CH	RIVERINE: medium-sized creeks to small rivers; various substrates; slow to moderate currents (Panhandle watersheds: Chipola, Econfina Creek, Ochlockonee)
Scupltured pigtoe (mussel)	*Quadrula infucata*		ce	RIVERINE: small streams to large rivers in sandy, muddy sand, or fine gravel substrates, pools, and rocky areas with swift current, often under debris (Panhandle watersheds: Apalachicola, Chipola)
Downy rainbow (mussel)	*Villosa villosa*		ce	RIVERINE: small streams to large rivers in sand or muddy sand substrates (Panhandle watersheds: Apalachicola, Chipola, Escambia, Choctawhatchee, Ochlockonee, Suwannee)
PLANTS:				
American chaffseed	*Schwalbea americana*	E	E	PALUSTRINE: wet prairie TERRESTRIAL: scrub, sandhill, mesic flatwoods
Scare-weed	*Baptisia simplicifolia*	T	ce	TERRESTRIAL: mesic flatwoods, sandhill; on disturbed sites
Flyr's brickell-bush	*Brickellia cordifolia*	E	ce	TERRESTRIAL: upland hardwood forest, near streams
Wood's poppy-mallow	*Callirhoe papaver*	E		TERRESTRIAL: upland mixed forest, roadsides; edge or understory
Baltzell's sedge	*Carex baltzellii*	T	ce	TERRESTRIAL: slope forest, moist sandy loam; moist sandy loam
Alternate-leaf or pagoda dogwood	*Cornus alternifolia*	E		PALUSTRINE: creek swamps TERRESTRIAL: slope forest, upland hardwood forest, bluffs
Spoon-leaved sundew	*Drosera intermedia*	T		LACUSTRINE: sinkhole lake edges PALUSTRINE: seepage slope, wet flatwoods, depression marsh RIVERINE: seepage stream banks, drainage ditches
Trout lily	*Erythronium umbilicatum*	E		TERRESTRIAL: slope forest, bluff
Wiregrass gentian	*Gentiana pennelliana*	E	ce	PALUSTRINE: seepage slope, wet prairie, roadside ditches TERRESTRIAL: mesic flatwoods, planted slash pine
Heartleaf	*Hexastylis arifolia*	T		RIVERINE: seepage stream bank TERRESTRIAL: slope forest
Mountain laurel	*Kalmia latifolia*	T		RIVERINE: seepage stream bank TERRESTRIAL: slope forest, seepage stream banks

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Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Panhandle lily	*Lilium iridollae*	E	ce	PALUSTRINE: baygall, dome swamp edges, mucky soil, seepage slope, edges of titi bogs, RIVERINE: blackwater stream banks
Curtiss' loosestrife	*Lythrum curtissii*	E	ce	PALUSTRINE: wet flatwoods edges, floodplain swamp, seepage slope, dome swamp edges TERRESTRIAL: seepage slope
Hummingbird flower	*Macranthera flammea*	E		PALUSTRINE: seepage slope, dome swamp edges, floodplain swamps RIVERINE: seepage stream banks TERRESTRIAL: seepage slopes
Ashe's magnolia	*Magnolia ashei*	E		TERRESTRIAL: slope and upland hardwood forest, ravines
Pyramid magnolia	*Magnolia pyramidata*	E		TERRESTRIAL: slope forest
Green adder's-mouth	*Malaxis unifolia*	E		PALUSTRINE: floodplain forest TERRESTRIAL: slope forest, upland mixed forest
Alabama anglepod	*Matelea alabamensis*	E	ce	TERRESTRIAL: bluff, slope forest, upland hardwood forest; on slopes
Indian cucumber-root	*Medeola virginiana*	E		PALUSTRINE: bottomland forest TERRESTRIAL: bottomland forest
Chapman's butterwort	*Pinguicula planifolia*	T	ce	PALUSTRINE: wet flatwoods, seepage slopes, bog, dome swamp, ditches; in water
Bent golden aster	*Pityopsis flexuosa*	E	ce	TERRESTRIAL: sandhill, upland pine forest, ruderal
Snowy orchid	*Platanthera nivea*	T		PALUSTRINE: bogs
Mexican tear-thumb	*Polygonum meisnerianum*	E		LACUSTRINE: clastic upland lakes, sandhill upland lake, sinkhole lake PALUSTRINE: floodplain forests; shallow water at edge
Panhandle Meadowbeauty	*Rhexia salicifolia*		*ce*	
Orange azalea	*Rhododendron austrinum*	E		PALUSTRINE: bottomland forest RIVERINE: seepage stream bank TERRESTRIAL: slope forest, upland mixed forest
Heart-leaved willow	*Salix eriocephala*	E		PALUSTRINE: floodplain swamp, alluvial woodlands
Hooded pitcher plant	*Sarracenia minor*	T		PALUSTRINE: wet flatwoods, wet prairie, seepage slope
Rue anemone	*Thalictrum thalictroides*	T		TERRESTRIAL: bluff, slope forest; on limestone
Karst pond xyris	*Xyris longisepala*	E		LACUSTRINE: sandhill upland lake margins

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U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species-list.

Endangered Species Act species-list information for your project is available online and listed below for the following FWS Field Offices:

PANAMA CITY ECOLOGICAL SERVICES FIELD OFFICE
1601 BALBOA AVENUE
PANAMA CITY, FL 32405
(850) 769-0552
http://www.fws.gov/panamacity/specieslist.html
http://www.fws.gov/panamacity/pcdata.html

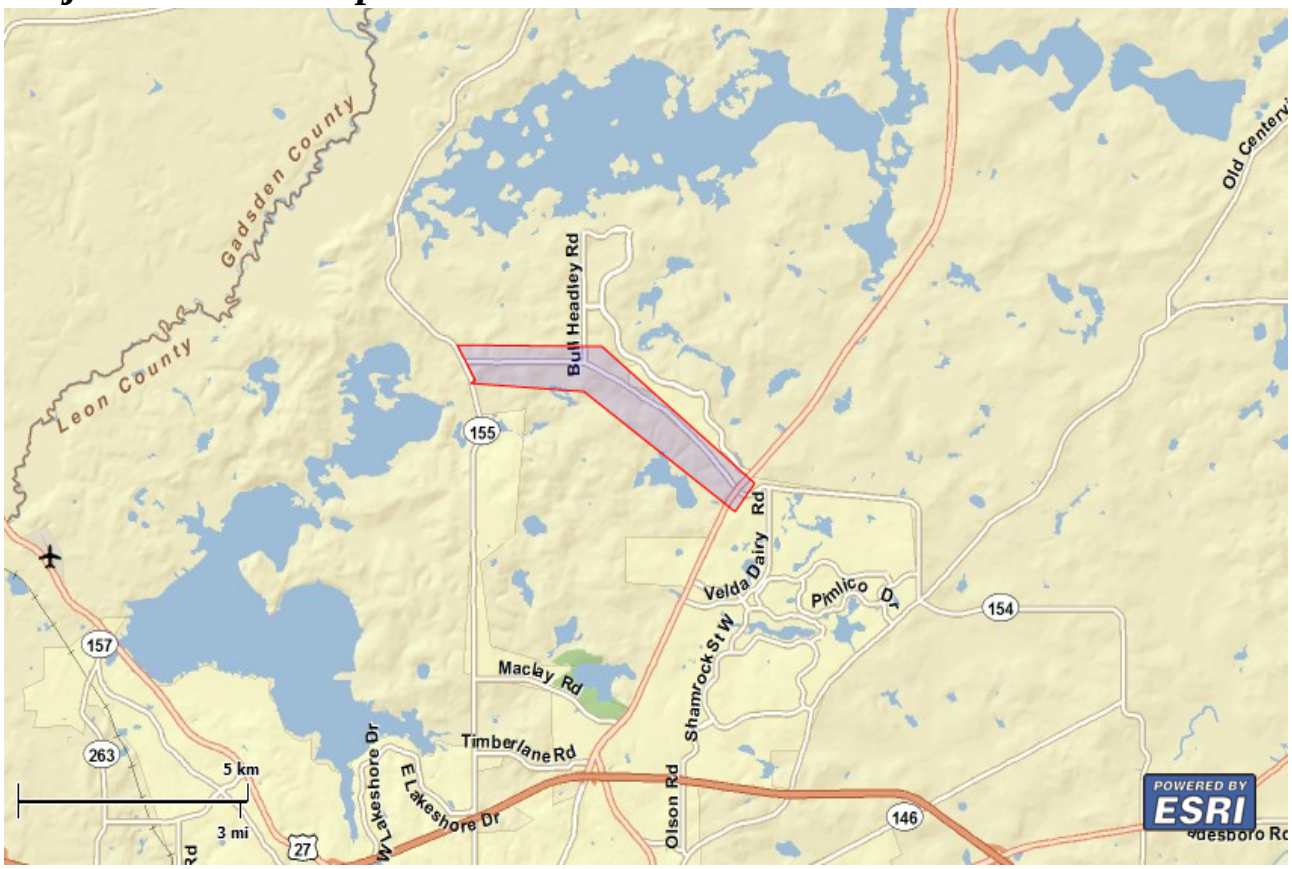
Project Name:

Bannerman Road

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Counties:

Leon, FL

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-84.2812424 30.5905672, -84.2482834 30.5902239, -84.2136078 30.5620714, -84.218071 30.556235, -84.2524033 30.5809542, -84.2781525 30.5826708, -84.2771225 30.5833575, -84.2812424 30.5905672)))

Project Type:

Transportation

U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species-list

There are a total of **10** species in your species-list

Species that may be affected by your project:

Birds				
Red-Cockaded woodpecker (*Picoides borealis*)	Endangered	species info		Panama City Ecological Services Field Office
Wood stork (*Mycteria americana*) Population: AL, FL, GA, SC	Endangered	species info		Panama City Ecological Services Field Office
Clams				
Ochlockonee moccasinshell (*Medionidus simpsonianus*)	Endangered	species info		Panama City Ecological Services Field Office
Oval pigtoe (*Pleurobema pyriforme*)	Endangered	species info		Panama City Ecological Services Field Office
Purple bankclimber (*Elliptoideus sloatianus*)	Threatened	species info		Panama City Ecological Services Field Office
Shinyrayed pocketbook (*Lampsilis subangulata*)	Endangered	species info		Panama City Ecological Services Field Office
Fishes				
Gulf sturgeon (*Acipenser oxyrinchus desotoi*)	Threatened	species info		Panama City Ecological Services Field Office
Flowering Plants				
American chaffseed (*Schwalbea americana*)	Endangered	species info		Panama City Ecological Services Field Office
Mammals				
Gray bat (*Myotis grisescens*)	Endangered	species info		Panama City Ecological Services Field Office
Reptiles				
Eastern Indigo snake (*Drymarchon corais couperi*)	Threatened	species info		Panama City Ecological Services Field Office

U.S. Fish and Wildlife Service

Natural Resources of Concern

FWS National Wildlife Refuges

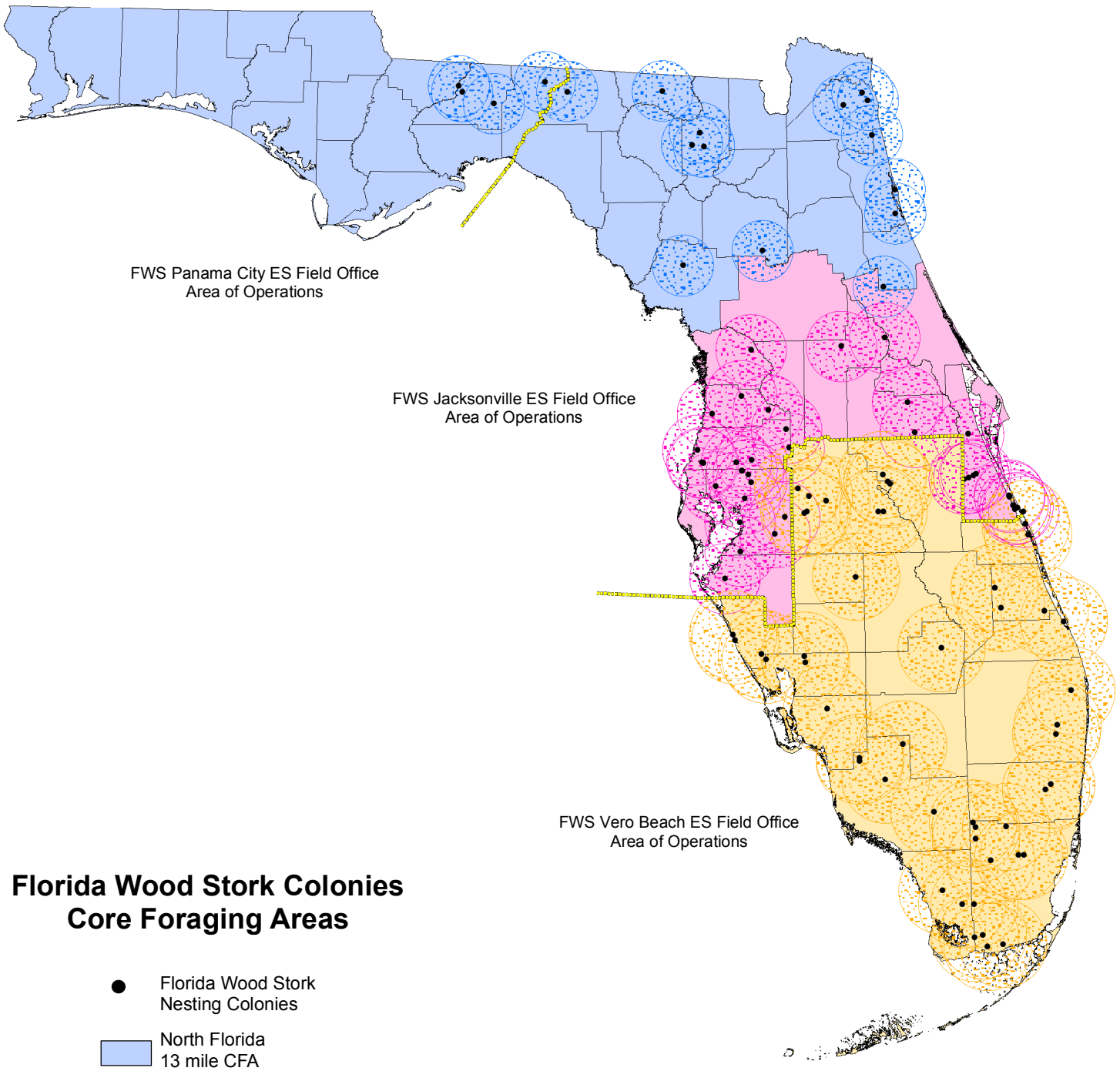
There are no refuges found within the vicinity of your project.

FWS Migratory Birds

Not yet available through IPaC.

FWS Delineated Wetlands

Not yet available through IPaC.



Florida Wood Stork Colonies
Core Foraging Areas

- Florida Wood Stork Nesting Colonies
- North Florida 13 mile CFA
- Central Florida 15 mile CFA
- South Florida 18.6 mile CFA

N

0 25 50 100 Miles

The U.S. Fish and Wildlife Service gives no warranty, either expressed or implied, as to the accuracy, reliability, or completeness of this map.

20100224_map_Wood Stork Core Foraging Areas

Appendix G

Traffic Counts and Traffic Data

MioVision Numbers

07-27-2010	Thomasville (South)			Thomasville (North)			Bannerman (West)			Bannerman (East)		
START TIME	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
06:00 AM	0	50	2	5	39	4	4	1	6	35	4	3
06:15 AM	1	81	5	3	19	9	0	2	6	63	3	0
06:30 AM	0	100	7	4	27	11	6	4	12	80	8	6
06:45 AM	0	161	17	6	47	8	6	3	15	145	3	6
07:00 AM	4	169	3	6	56	20	7	15	15	163	9	8
07:15 AM	2	239	8	5	56	24	9	13	29	229	8	11
07:30 AM	2	266	17	16	68	26	6	10	39	243	5	20
07:45 AM	3	283	20	10	85	22	12	11	32	287	26	12
08:00 AM	6	210	12	16	113	54	4	20	41	233	22	17
08:15 AM	2	214	15	17	108	30	13	9	35	214	19	26
08:30 AM	4	228	13	19	93	49	4	11	44	193	15	11
08:45 AM	7	204	10	7	109	66	5	13	47	191	12	16
TOTAL:	31	2205	129	114	820	323	76	112	321	2076	134	136
% Cars	93.55%	96.55%	99.22%	90.35%	90.49%	93.50%	100.00%	95.54%	95.64%	99.08%	95.52%	98.53%
% Trucks (Medium)	0.00%	1.50%	0.00%	8.77%	4.76%	3.72%	0.00%	2.68%	1.56%	0.67%	3.73%	0.74%
% Trucks (Large)	6.45%	1.95%	0.78%	0.88%	4.76%	2.79%	0.00%	1.79%	2.80%	0.24%	0.75%	0.00%
Cars	29	2129	128	103	742	302	76	107	307	2057	128	134
Trucks (Medium)	0	33	0	10	39	12	0	3	5	14	5	1
Trucks (Large)	2	43	1	1	39	9	0	2	9	5	1	0

MioVision Numbers

07-27-2010	Thomasville (South)			Thomasville (North)			Bannerman (West)			Bannerman (East)		
START TIME	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
04:00 PM	13	114	19	31	226	134	11	40	45	68	17	26
04:15 PM	7	139	23	33	215	124	21	31	51	75	12	10
04:30 PM	3	109	32	28	276	147	23	40	39	73	22	25
04:45 PM	13	146	26	31	249	176	21	44	48	58	8	21
05:00 PM	14	151	23	41	281	181	23	56	50	63	17	30
05:15 PM	8	124	34	29	295	209	23	66	58	77	10	28
05:30 PM	8	143	18	44	312	184	45	86	43	86	22	32
05:45 PM	16	163	34	38	324	241	36	87	43	93	25	31
06:00 PM	16	154	23	31	268	201	27	58	47	59	16	25
06:15 PM	8	115	18	29	265	206	20	67	37	82	11	27
06:30 PM	9	140	16	32	261	163	31	52	38	79	17	21
06:45 PM	15	101	22	30	193	163	5	29	60	76	24	28
TOTAL:	130	1599	288	397	3165	2129	286	656	559	889	201	304
% Cars	100.00%	96.06%	99.31%	99.50%	97.91%	99.67%	99.65%	99.39%	96.24%	98.20%	99.50%	98.03%
% Trucks (Medium)	0.00%	1.38%	0.69%	0.25%	0.98%	0.19%	0.35%	0.46%	2.68%	1.69%	0.50%	1.64%
% Trucks (Large)	0.00%	2.56%	0.00%	0.25%	1.11%	0.14%	0.00%	0.15%	1.07%	0.11%	0.00%	0.00%
Cars	130	1536	286	395	3099	2122	285	652	538	873	200	298
Trucks (Medium)	0	22	2	1	31	4	1	3	15	15	1	5
Trucks (Large)	0	41	0	1	35	3	0	1	6	1	0	0

07-13-2010	Tekesta Rd (South)		Bannerman Rd (East)		Bannerman Rd (West)	
START TIME	RIGHT	LEFT	LEFT	THRU	THRU	RIGHT
06:00 AM	1	28	0	25	2	2
06:15 AM	1	36	0	47	7	4
06:30 AM	3	84	1	59	13	3
06:45 AM	9	99	2	60	20	7
07:00 AM	4	117	8	118	18	8
07:15 AM	6	145	1	120	24	12
07:30 AM	4	163	3	116	22	22
07:45 AM	9	152	4	118	32	17
08:00 AM	9	143	5	110	23	21
08:15 AM	6	123	1	91	33	16
08:30 AM	12	100	3	95	38	18
08:45 AM	5	93	6	101	47	32
TOTAL:	69	1283	34	1060	279	162
% Cars	97.10%	99.92%	97.06%	101.89%	95.34%	98.15%
% Trucks (Medium)	1.45%	0.23%	0.00%	0.57%	1.43%	1.85%
% Trucks (Large)	1.45%	0.00%	2.94%	0.38%	3.23%	0.00%
Cars	67	1282	33	1080	266	159
Trucks (Medium)	1	3	0	6	4	3
Trucks (Large)	1	0	1	4	9	0

07-29-2010	Tekesta Rd (South)		Bannerman Rd (East)		Bannerman Rd (West)	
START TIME	RIGHT	LEFT	THRU	LEFT	RIGHT	THRU
04:00 PM	8	41	59	5	63	95
04:15 PM	4	51	59	13	55	96
04:30 PM	6	43	52	12	84	110
04:45 PM	11	42	71	10	76	95
05:00 PM	12	40	70	11	85	116
05:15 PM	10	54	56	9	94	123
05:30 PM	7	52	66	17	93	125
05:45 PM	15	43	64	11	111	139
06:00 PM	8	65	79	15	111	136
06:15 PM	9	58	56	9	100	134
06:30 PM	12	51	70	10	79	100
06:45 PM	10	57	52	5	70	122
TOTAL:	112	597	754	127	1021	1391
% Cars	99.11%	99.33%	98.94%	100.00%	99.71%	99.57%
% Trucks (Medium)	0.89%	0.50%	0.93%	0.00%	0.29%	0.36%
% Trucks (Large)	0.00%	0.17%	0.13%	0.00%	0.00%	0.07%
Cars	111	593	746	127	1018	1385
Trucks (Medium)	1	3	7	0	3	5
Trucks (Large)	0	1	1	0	0	1

08-03-2010	Meridian Rd (South)		Meridian Rd (North)		Bannerman Rd (West)	
START TIME	THRU	LEFT	RIGHT	THRU	RIGHT	LEFT
06:00 AM	10	3	3	0	0	13
06:15 AM	11	7	0	4	2	14
06:30 AM	26	11	1	4	4	22
06:45 AM	24	9	5	4	6	17
07:00 AM	26	9	2	8	9	53
07:15 AM	28	12	4	12	9	52
07:30 AM	34	7	4	6	14	55
07:45 AM	21	10	9	13	2	58
08:00 AM	26	13	13	5	10	43
08:15 AM	32	10	14	6	6	49
08:30 AM	17	7	12	2	8	41
08:45 AM	18	8	20	11	6	30
TOTAL:	273	106	87	75	76	447
% Cars	100.00%	100.00%	100.00%	100.00%	100.00%	99.78%
% Trucks (Medium)	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%
% Trucks (Large)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cars	273	106	87	75	76	446
Trucks (Medium)	0	0	0	0	0	1
Trucks (Large)	0	0	0	0	0	0

08-03-2010	Meridian Rd (South)		Meridian Rd (North)		Bannerman Rd (West)	
START TIME	THRU	LEFT	RIGHT	THRU	RIGHT	LEFT
04:00 PM	8	11	38	12	18	22
04:15 PM	6	12	31	18	21	24
04:30 PM	7	14	46	25	15	21
04:45 PM	11	15	47	20	15	21
05:00 PM	15	11	50	30	12	26
05:15 PM	21	15	48	36	18	25
05:30 PM	12	18	54	35	13	28
05:45 PM	16	4	65	38	11	36
06:00 PM	10	11	54	43	19	26
06:15 PM	8	15	49	34	14	24
06:30 PM	11	9	39	17	11	26
06:45 PM	11	5	35	12	10	25
TOTAL:	136	140	556	320	177	304
% Cars	96.32%	98.57%	99.46%	99.06%	94.92%	99.01%
% Trucks (Medium)	2.21%	0.00%	0.36%	0.31%	3.39%	0.99%
% Trucks (Large)	1.47%	1.43%	0.18%	0.63%	1.69%	0.00%
Cars	131	138	553	317	168	301
Trucks (Medium)	3	0	2	1	6	3
Trucks (Large)	2	2	1	2	3	0

08-03-2010	Bull Headley Rd (South)		Bannerman Rd (East)		Bannerman Rd (West)	
START TIME	RIGHT	LEFT	THRU	LEFT	RIGHT	THRU
06:00 AM	8	13	12	3	3	4
06:15 AM	13	22	17	2	0	6
06:30 AM	14	31	26	4	3	11
06:45 AM	12	35	27	9	2	18
07:00 AM	35	45	39	6	4	18
07:15 AM	36	40	46	5	14	24
07:30 AM	41	69	33	12	6	20
07:45 AM	26	50	48	8	7	27
08:00 AM	29	50	44	7	15	29
08:15 AM	29	48	48	8	15	32
08:30 AM	22	30	49	15	9	36
08:45 AM	21	36	38	14	22	34
TOTAL:	286	469	427	93	100	259
% Cars	100.00%	99.57%	99.30%	100.00%	97.00%	98.07%
% Trucks (Medium)	0.00%	0.43%	0.23%	0.00%	3.00%	0.77%
% Trucks (Large)	0.00%	0.00%	0.47%	0.00%	0.00%	1.16%
Cars	286	467	424	93	97	254
Trucks (Medium)	0	2	1	0	3	2
Trucks (Large)	0	0	2	0	0	3

08-03-2010	Bull Headley Rd (South)		Bannerman Rd (East)		Bannerman Rd (West)	
START TIME	RIGHT	LEFT	THRU	LEFT	RIGHT	THRU
04:00 PM	77	34	29	29	34	49
04:15 PM	15	30	40	24	45	56
04:30 PM	16	20	59	30	53	69
04:45 PM	22	21	53	30	45	49
05:00 PM	27	14	54	32	56	42
05:15 PM	27	15	48	44	65	73
05:30 PM	22	25	62	42	75	56
05:45 PM	27	25	56	46	85	67
06:00 PM	17	19	56	35	65	79
06:15 PM	19	27	54	33	57	53
06:30 PM	19	25	40	30	50	64
06:45 PM	14	11	39	22	42	50
TOTAL:	302	266	590	397	672	707
% Cars	98.01%	98.12%	98.64%	99.50%	99.85%	99.15%
% Trucks (Medium)	0.33%	1.13%	0.51%	0.50%	0.15%	0.14%
% Trucks (Large)	1.66%	0.75%	0.85%	0.00%	0.00%	0.71%
Cars	296	261	582	395	671	701
Trucks (Medium)	1	3	3	2	1	1
Trucks (Large)	5	2	5	0	0	5

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[00:00-00:15]	21	44MPH	83 F	Dry		0
[00:15-00:30]	9	41MPH	83 F	Dry		0
[00:30-00:45]	11	41MPH	83 F	Dry		0
[00:45-01:00]	15	43MPH	83 F	Dry		0
[01:00-01:15]	8	45MPH	83 F	Dry		0
[01:15-01:30]	12	47MPH	83 F	Dry		0
[01:30-01:45]	8	48MPH	83 F	Dry		0
[01:45-02:00]	8	43MPH	83 F	Dry		0
[02:00-02:15]	4	51MPH	83 F	Dry		0
[02:15-02:30]	7	49MPH	83 F	Dry		0
[02:30-02:45]	7	45MPH	83 F	Dry		0
[02:45-03:00]	7	45MPH	83 F	Dry		0
[03:00-03:15]	3	53MPH	83 F	Dry		0
[03:15-03:30]	3	35MPH	83 F	Dry		0
[03:30-03:45]	4	48MPH	83 F	Dry		0
[03:45-04:00]	4	35MPH	83 F	Dry		0
[04:00-04:15]	4	45MPH	83 F	Dry		0
[04:15-04:30]	3	56MPH	83 F	Dry		0
[04:30-04:45]	8	44MPH	83 F	Dry		0
[04:45-05:00]	6	36MPH	83 F	Dry		0
[05:00-05:15]	4	51MPH	83 F	Dry		0
[05:15-05:30]	10	46MPH	83 F	Dry		0
[05:30-05:45]	3	50MPH	83 F	Dry		0
[05:45-06:00]	11	49MPH	83 F	Dry		0
[06:00-06:15]	9	45MPH	83 F	Dry		0
[06:15-06:30]	15	39MPH	83 F	Dry		0
[06:30-06:45]	14	46MPH	83 F	Dry		0
[06:45-07:00]	26	39MPH	82 F	Dry		0
[07:00-07:15]	28	44MPH	83 F	Dry		0
[07:15-07:30]	39	42MPH	83 F	Dry		0
[07:30-07:45]	34	43MPH	83 F	Dry		0
[07:45-08:00]	62	42MPH	83 F	Dry		1
[08:00-08:15]	53	41MPH	83 F	Dry		1
[08:15-08:30]	61	38MPH	85 F	Dry		1
[08:30-08:45]	59	45MPH	85 F	Dry		1
[08:45-09:00]	75	40MPH	85 F	Dry		1
[09:00-09:15]	75	42MPH	87 F	Dry		1
[09:15-09:30]	69	44MPH	89 F	Dry		1
[09:30-09:45]	75	41MPH	91 F	Dry		1
[09:45-10:00]	82	43MPH	91 F	Dry		4

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[10:00-10:15]	48	46MPH	93 F	Dry		0
[10:15-10:30]	74	43MPH	97 F	Dry		5
[10:30-10:45]	99	44MPH	97 F	Dry		1
[10:45-11:00]	78	42MPH	99 F	Dry		1
[11:00-11:15]	89	43MPH	99 F	Dry		1
[11:15-11:30]	85	39MPH	99 F	Dry		2
[11:30-11:45]	99	41MPH	99 F	Dry		2
[11:45-12:00]	98	42MPH	101 F	Dry		1
[12:00-12:15]	118	42MPH	101 F	Dry		2
[12:15-12:30]	135	40MPH	103 F	Dry		3
[12:30-12:45]	123	42MPH	105 F	Dry		2
[12:45-13:00]	118	42MPH	103 F	Dry		2
[13:00-13:15]	115	39MPH	105 F	Dry		2
[13:15-13:30]	124	41MPH	107 F	Dry		2
[13:30-13:45]	141	40MPH	107 F	Dry		3
[13:45-14:00]	120	41MPH	107 F	Dry		2
[14:00-14:15]	126	40MPH	105 F	Dry		2
[14:15-14:30]	153	39MPH	103 F	Dry		3
[14:30-14:45]	137	42MPH	101 F	Dry		3
[14:45-15:00]	119	42MPH	101 F	Dry		2
[15:00-15:15]	151	40MPH	99 F	Dry		3
[15:15-15:30]	132	37MPH	101 F	Dry		4
[15:30-15:45]	150	41MPH	101 F	Dry		3
[15:45-16:00]	149	41MPH	101 F	Dry		3
[16:00-16:15]	165	38MPH	101 F	Dry		4
[16:15-16:30]	177	39MPH	101 F	Dry		3
[16:30-16:45]	186	41MPH	101 F	Dry		3
[16:45-17:00]	248	37MPH	101 F	Dry		5
[17:00-17:15]	248	33MPH	101 F	Dry		6
[17:15-17:30]	296	34MPH	99 F	Dry		7
[17:30-17:45]	298	32MPH	99 F	Dry		8
[17:45-18:00]	304	34MPH	97 F	Dry		8
[18:00-18:15]	241	36MPH	97 F	Dry		5
[18:15-18:30]	268	37MPH	97 F	Dry		7
[18:30-18:45]	274	36MPH	97 F	Dry		6
[18:45-19:00]	204	37MPH	97 F	Dry		5
[19:00-19:15]	158	38MPH	97 F	Dry		4
[19:15-19:30]	191	39MPH	97 F	Dry		4
[19:30-19:45]	164	38MPH	97 F	Dry		3
[19:45-20:00]	175	38MPH	97 F	Dry		4

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[20:00-20:15]	152	40MPH	95 F	Dry		3
[20:15-20:30]	156	40MPH	95 F	Dry		3
[20:30-20:45]	146	42MPH	95 F	Dry		2
[20:45-21:00]	152	40MPH	93 F	Dry		3
[21:00-21:15]	130	38MPH	93 F	Dry		3
[21:15-21:30]	114	38MPH	93 F	Dry		2
[21:30-21:45]	91	42MPH	91 F	Dry		1
[21:45-22:00]	97	43MPH	91 F	Dry		1
[22:00-22:15]	75	45MPH	91 F	Dry		1
[22:15-22:30]	57	39MPH	89 F	Dry		1
[22:30-22:45]	51	43MPH	89 F	Dry		0
[22:45-23:00]	35	45MPH	89 F	Dry		0
[23:00-23:15]	34	44MPH	89 F	Dry		0
[23:15-23:30]	38	42MPH	89 F	Dry		0
[23:30-23:45]	26	43MPH	89 F	Dry		0
[23:45-00:00]	14	46MPH	89 F	Dry		0
Wed,Jun/30/2010						
[00:00-00:15]	11	46MPH	87 F	Dry		0
[00:15-00:30]	15	40MPH	87 F	Dry		0
[00:30-00:45]	17	47MPH	87 F	Dry		0
[00:45-01:00]	19	44MPH	87 F	Dry		0
[01:00-01:15]	16	45MPH	87 F	Dry		0
[01:15-01:30]	14	45MPH	87 F	Dry		0
[01:30-01:45]	8	44MPH	85 F	Dry		0
[01:45-02:00]	5	46MPH	85 F	Dry		0
[02:00-02:15]	4	45MPH	85 F	Dry		0
[02:15-02:30]	10	47MPH	85 F	Dry		0
[02:30-02:45]	10	40MPH	85 F	Dry		0
[02:45-03:00]	22	46MPH	85 F	Dry		0
[03:00-03:15]	8	50MPH	85 F	Dry		0
[03:15-03:30]	3	41MPH	85 F	Dry		0
[03:30-03:45]	4	42MPH	85 F	Dry		0
[03:45-04:00]	4	48MPH	85 F	Dry		0
[04:00-04:15]	2	45MPH	83 F	Dry		0
[04:15-04:30]	3	47MPH	83 F	Dry		0
[04:30-04:45]	1	48MPH	83 F	Dry		0
[04:45-05:00]	4	48MPH	83 F	Dry		0
[05:00-05:15]	3	51MPH	83 F	Dry		0
[05:15-05:30]	8	45MPH	83 F	Dry		0
[05:30-05:45]	10	41MPH	83 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[05:45-06:00]	14	47MPH	83 F	Dry		0
[06:00-06:15]	6	46MPH	83 F	Dry		0
[06:15-06:30]	11	47MPH	83 F	Dry		0
[06:30-06:45]	17	44MPH	83 F	Dry		0
[06:45-07:00]	27	43MPH	83 F	Dry		0
[07:00-07:15]	32	45MPH	83 F	Dry		0
[07:15-07:30]	40	44MPH	83 F	Dry		0
[07:30-07:45]	34	38MPH	83 F	Dry		0
[07:45-08:00]	59	41MPH	83 F	Dry		1
[08:00-08:15]	41	41MPH	83 F	Dry		0
[08:15-08:30]	50	44MPH	83 F	Dry		1
[08:30-08:45]	58	39MPH	83 F	Dry		1
[08:45-09:00]	82	41MPH	85 F	Dry		1
[09:00-09:15]	78	42MPH	85 F	Dry		1
[09:15-09:30]	67	42MPH	87 F	Dry		1
[09:30-09:45]	69	42MPH	89 F	Dry		1
[09:45-10:00]	74	44MPH	89 F	Dry		1
[10:00-10:15]	77	43MPH	93 F	Dry		1
[10:15-10:30]	71	40MPH	93 F	Dry		1
[10:30-10:45]	84	42MPH	95 F	Dry		1
[10:45-11:00]	73	42MPH	95 F	Dry		1
[11:00-11:15]	76	42MPH	95 F	Dry		1
[11:15-11:30]	90	39MPH	95 F	Dry		1
[11:30-11:45]	123	41MPH	95 F	Dry		3
[11:45-12:00]	105	41MPH	97 F	Dry		2
[12:00-12:15]	127	40MPH	97 F	Dry		3
[12:15-12:30]	128	39MPH	101 F	Dry		3
[12:30-12:45]	129	43MPH	101 F	Dry		2
[12:45-13:00]	136	40MPH	99 F	Dry		3
[13:00-13:15]	123	39MPH	97 F	Dry		3
[13:15-13:30]	117	37MPH	93 F	Dry		17
[13:30-13:45]	131	41MPH	91 F	Dry		2
[13:45-14:00]	129	38MPH	89 F	Dry		3
[14:00-14:15]	108	38MPH	89 F	Dry		3
[14:15-14:30]	109	38MPH	87 F	Dry		2
[14:30-14:45]	106	41MPH	87 F	Dry		1
[14:45-15:00]	126	38MPH	85 F	Dry		3
[15:00-15:15]	117	41MPH	87 F	Dry		2
[15:15-15:30]	114	37MPH	87 F	Dry		3
[15:30-15:45]	135	39MPH	87 F	Dry		3

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[15:45-16:00]	152	41MPH	89 F	Dry		3
[16:00-16:15]	151	39MPH	91 F	Dry		3
[16:15-16:30]	174	39MPH	91 F	Dry		3
[16:30-16:45]	192	39MPH	91 F	Dry		4
[16:45-17:00]	199	41MPH	91 F	Dry		4
[17:00-17:15]	218	37MPH	91 F	Dry		5
[17:15-17:30]	282	35MPH	91 F	Dry		7
[17:30-17:45]	252	37MPH	91 F	Dry		6
[17:45-18:00]	302	35MPH	91 F	Dry		7
[18:00-18:15]	288	37MPH	91 F	Dry		21
[18:15-18:30]	241	36MPH	93 F	Dry		5
[18:30-18:45]	230	39MPH	93 F	Dry		9
[18:45-19:00]	216	39MPH	93 F	Dry		4
[19:00-19:15]	196	36MPH	91 F	Dry		5
[19:15-19:30]	183	41MPH	91 F	Dry		3
[19:30-19:45]	167	39MPH	91 F	Dry		3
[19:45-20:00]	155	41MPH	89 F	Dry		3
[20:00-20:15]	180	41MPH	89 F	Dry		3
[20:15-20:30]	180	40MPH	89 F	Dry		3
[20:30-20:45]	143	38MPH	89 F	Dry		3
[20:45-21:00]	158	38MPH	89 F	Dry		3
[21:00-21:15]	128	37MPH	87 F	Dry		3
[21:15-21:30]	129	36MPH	83 F	Dry		3
[21:30-21:45]	119	32MPH	80 F	Dry		3
[21:45-22:00]	89	33MPH	78 F	Dry		2
[22:00-22:15]	79	34MPH	78 F	Dry		1
[22:15-22:30]	69	36MPH	78 F	Dry		1
[22:30-22:45]	67	39MPH	80 F	Dry		1
[22:45-23:00]	68	36MPH	80 F	Dry		1
[23:00-23:15]	46	39MPH	80 F	Dry		0
[23:15-23:30]	39	41MPH	80 F	Dry		0
[23:30-23:45]	29	41MPH	80 F	Dry		0
[23:45-00:00]	28	40MPH	80 F	Dry		5
Thu,Jul/01/2010						
[00:00-00:15]	27	40MPH	80 F	Dry		0
[00:15-00:30]	17	42MPH	80 F	Dry		0
[00:30-00:45]	17	39MPH	80 F	Dry		0
[00:45-01:00]	13	40MPH	80 F	Dry		0
[01:00-01:15]	14	37MPH	80 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[01:15-01:30]	11	45MPH	80 F	Dry		0
[01:30-01:45]	5	46MPH	80 F	Dry		0
[01:45-02:00]	15	41MPH	80 F	Dry		0
[02:00-02:15]	6	36MPH	80 F	Dry		0
[02:15-02:30]	8	50MPH	80 F	Dry		0
[02:30-02:45]	9	42MPH	80 F	Dry		0
[02:45-03:00]	12	43MPH	80 F	Dry		0
[03:00-03:15]	3	44MPH	80 F	Dry		0
[03:15-03:30]	5	46MPH	80 F	Dry		0
[03:30-03:45]	4	46MPH	80 F	Dry		0
[03:45-04:00]	3	40MPH	80 F	Dry		0
[04:00-04:15]	3	44MPH	80 F	Dry		0
[04:15-04:30]	6	39MPH	80 F	Dry		0
[04:30-04:45]	3	41MPH	80 F	Dry		0
[04:45-05:00]	8	47MPH	80 F	Dry		0
[05:00-05:15]	5	45MPH	80 F	Dry		0
[05:15-05:30]	9	47MPH	80 F	Dry		0
[05:30-05:45]	8	47MPH	80 F	Dry		0
[05:45-06:00]	2	52MPH	80 F	Dry		0
[06:00-06:15]	8	47MPH	80 F	Dry		0
[06:15-06:30]	10	46MPH	80 F	Dry		0
[06:30-06:45]	16	44MPH	80 F	Dry		0
[06:45-07:00]	24	45MPH	80 F	Dry		0
[07:00-07:15]	27	39MPH	80 F	Dry		0
[07:15-07:30]	38	45MPH	80 F	Dry		0
[07:30-07:45]	38	45MPH	80 F	Dry		0
[07:45-08:00]	42	42MPH	80 F	Dry		0
[08:00-08:15]	38	41MPH	80 F	Dry		0
[08:15-08:30]	60	42MPH	80 F	Dry		1
[08:30-08:45]	64	37MPH	82 F	Dry		1
[08:45-09:00]	68	41MPH	80 F	Dry		1
[09:00-09:15]	58	41MPH	80 F	Dry		1
[09:15-09:30]	68	43MPH	80 F	Dry		1
[09:30-09:45]	65	41MPH	80 F	Dry		1
[09:45-10:00]	71	44MPH	82 F	Dry		1
[10:00-10:15]	69	41MPH	82 F	Dry		1
[10:15-10:30]	89	40MPH	82 F	Dry		1
[10:30-10:45]	70	42MPH	83 F	Dry		1
[10:45-11:00]	84	44MPH	85 F	Dry		1
[11:00-11:15]	83	41MPH	85 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[11:15-11:30]	76	43MPH	85 F	Dry		1
[11:30-11:45]	94	39MPH	85 F	Dry		1
[11:45-12:00]	103	40MPH	83 F	Dry		2
[12:00-12:15]	118	40MPH	83 F	Dry		2
[12:15-12:30]	123	37MPH	83 F	Dry		3
[12:30-12:45]	147	40MPH	83 F	Dry		3
[12:45-13:00]	117	38MPH	83 F	Dry		4
[13:00-13:15]	126	39MPH	83 F	Dry		3
[13:15-13:30]	122	39MPH	83 F	Dry		2
[13:30-13:45]	131	39MPH	83 F	Dry		3
[13:45-14:00]	118	41MPH	83 F	Dry		2
[14:00-14:15]	115	39MPH	83 F	Dry		3
[14:15-14:30]	138	39MPH	83 F	Dry		3
[14:30-14:45]	121	42MPH	85 F	Dry		2
[14:45-15:00]	119	41MPH	91 F	Dry		2
[15:00-15:15]	133	41MPH	91 F	Dry		2
[15:15-15:30]	129	42MPH	91 F	Dry		2
[15:30-15:45]	118	44MPH	95 F	Dry		1
[15:45-16:00]	168	41MPH	95 F	Dry		3
[16:00-16:15]	179	40MPH	93 F	Dry		3
[16:15-16:30]	177	37MPH	93 F	Dry		3
[16:30-16:45]	217	37MPH	93 F	Dry		5
[16:45-17:00]	218	38MPH	93 F	Dry		4
[17:00-17:15]	232	36MPH	91 F	Dry		5
[17:15-17:30]	268	35MPH	89 F	Dry		7
[17:30-17:45]	277	32MPH	89 F	Dry		8
[17:45-18:00]	287	34MPH	87 F	Dry		7
[18:00-18:15]	291	35MPH	87 F	Dry		7
[18:15-18:30]	278	36MPH	85 F	Dry		6
[18:30-18:45]	223	36MPH	87 F	Dry		5
[18:45-19:00]	185	38MPH	87 F	Dry		4
[19:00-19:15]	206	38MPH	85 F	Dry		4
[19:15-19:30]	183	37MPH	85 F	Dry		4
[19:30-19:45]	171	38MPH	85 F	Dry		3
[19:45-20:00]	178	40MPH	83 F	Dry		3
[20:00-20:15]	160	40MPH	83 F	Dry		3
[20:15-20:30]	150	39MPH	83 F	Dry		3
[20:30-20:45]	126	37MPH	82 F	Dry		3
[20:45-21:00]	126	36MPH	82 F	Dry		2
[21:00-21:15]	118	38MPH	82 F	Dry		2

[Raw] Volume Report

HI-Star ID: 1957	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25940
County: Leon	AADT Factor: 1	AADT Count: 8,647

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[21:15-21:30]	120	39 MPH	82 F	Dry		2
[21:30-21:45]	101	38 MPH	82 F	Dry		1
[21:45-22:00]	90	41 MPH	82 F	Dry		1
[22:00-22:15]	85	40 MPH	80 F	Dry		1
[22:15-22:30]	63	41 MPH	80 F	Dry		1
[22:30-22:45]	54	43 MPH	80 F	Dry		0
[22:45-23:00]	60	43 MPH	80 F	Dry		0
[23:00-23:15]	46	45 MPH	80 F	Dry		0
[23:15-23:30]	49	43 MPH	80 F	Dry		0
[23:30-23:45]	35	44 MPH	80 F	Dry		0
[23:45-00:00]	23	43 MPH	80 F	Dry		0
	25940	41 MPH	87 F			

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[00:00-00:15]	7	52MPH	85 F	Dry		0
[00:15-00:30]	4	59MPH	85 F	Dry		0
[00:30-00:45]	0	0MPH	85 F	Dry		0
[00:45-01:00]	4	38MPH	85 F	Dry		0
[01:00-01:15]	3	49MPH	85 F	Dry		0
[01:15-01:30]	1	52MPH	85 F	Dry		0
[01:30-01:45]	0	0MPH	85 F	Dry		0
[01:45-02:00]	1	52MPH	85 F	Dry		0
[02:00-02:15]	0	0MPH	85 F	Dry		0
[02:15-02:30]	0	0MPH	85 F	Dry		0
[02:30-02:45]	0	0MPH	85 F	Dry		0
[02:45-03:00]	1	52MPH	85 F	Dry		0
[03:00-03:15]	0	0MPH	85 F	Dry		0
[03:15-03:30]	1	48MPH	85 F	Dry		0
[03:30-03:45]	0	0MPH	85 F	Dry		0
[03:45-04:00]	1	42MPH	85 F	Dry		0
[04:00-04:15]	0	0MPH	85 F	Dry		0
[04:15-04:30]	2	33MPH	85 F	Dry		0
[04:30-04:45]	2	47MPH	85 F	Dry		0
[04:45-05:00]	1	32MPH	85 F	Dry		0
[05:00-05:15]	8	51MPH	85 F	Dry		0
[05:15-05:30]	3	49MPH	85 F	Dry		0
[05:30-05:45]	5	56MPH	85 F	Dry		0
[05:45-06:00]	6	52MPH	85 F	Dry		0
[06:00-06:15]	10	46MPH	85 F	Dry		0
[06:15-06:30]	18	48MPH	83 F	Dry		0
[06:30-06:45]	16	53MPH	83 F	Dry		0
[06:45-07:00]	37	49MPH	83 F	Dry		0
[07:00-07:15]	44	48MPH	83 F	Dry		0
[07:15-07:30]	74	48MPH	85 F	Dry		1
[07:30-07:45]	69	47MPH	85 F	Dry		1
[07:45-08:00]	51	51MPH	85 F	Dry		0
[08:00-08:15]	52	48MPH	85 F	Dry		0
[08:15-08:30]	45	48MPH	85 F	Dry		0
[08:30-08:45]	48	46MPH	87 F	Dry		0
[08:45-09:00]	31	48MPH	89 F	Dry		0
[09:00-09:15]	28	46MPH	91 F	Dry		0
[09:15-09:30]	33	50MPH	93 F	Dry		2
[09:30-09:45]	27	48MPH	95 F	Dry		0
[09:45-10:00]	24	48MPH	97 F	Dry		9

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[10:00-10:15]	25	47MPH	97 F	Dry		0
[10:15-10:30]	21	48MPH	101 F	Dry		0
[10:30-10:45]	15	47MPH	101 F	Dry		0
[10:45-11:00]	30	47MPH	103 F	Dry		0
[11:00-11:15]	27	49MPH	107 F	Dry		0
[11:15-11:30]	25	49MPH	107 F	Dry		0
[11:30-11:45]	18	49MPH	107 F	Dry		0
[11:45-12:00]	27	48MPH	109 F	Dry		0
[12:00-12:15]	22	50MPH	109 F	Dry		0
[12:15-12:30]	25	46MPH	111 F	Dry		0
[12:30-12:45]	23	45MPH	111 F	Dry		0
[12:45-13:00]	34	44MPH	111 F	Dry		0
[13:00-13:15]	26	46MPH	113 F	Dry		0
[13:15-13:30]	25	48MPH	115 F	Dry		0
[13:30-13:45]	34	49MPH	113 F	Dry		0
[13:45-14:00]	30	48MPH	111 F	Dry		0
[14:00-14:15]	35	47MPH	109 F	Dry		0
[14:15-14:30]	29	42MPH	105 F	Dry		3
[14:30-14:45]	35	47MPH	103 F	Dry		0
[14:45-15:00]	36	47MPH	101 F	Dry		0
[15:00-15:15]	34	46MPH	101 F	Dry		0
[15:15-15:30]	25	47MPH	99 F	Dry		0
[15:30-15:45]	29	49MPH	101 F	Dry		0
[15:45-16:00]	33	45MPH	101 F	Dry		0
[16:00-16:15]	39	47MPH	103 F	Dry		0
[16:15-16:30]	41	46MPH	103 F	Dry		0
[16:30-16:45]	40	46MPH	103 F	Dry		0
[16:45-17:00]	38	47MPH	103 F	Dry		0
[17:00-17:15]	52	49MPH	101 F	Dry		0
[17:15-17:30]	61	49MPH	101 F	Dry		1
[17:30-17:45]	53	51MPH	101 F	Dry		0
[17:45-18:00]	54	49MPH	101 F	Dry		0
[18:00-18:15]	37	48MPH	101 F	Dry		0
[18:15-18:30]	44	48MPH	99 F	Dry		0
[18:30-18:45]	37	48MPH	99 F	Dry		3
[18:45-19:00]	39	47MPH	99 F	Dry		0
[19:00-19:15]	24	46MPH	99 F	Dry		0
[19:15-19:30]	29	48MPH	97 F	Dry		0
[19:30-19:45]	23	49MPH	97 F	Dry		0
[19:45-20:00]	17	47MPH	97 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[20:00-20:15]	21	53MPH	97 F	Dry		0
[20:15-20:30]	20	48MPH	95 F	Dry		0
[20:30-20:45]	14	48MPH	95 F	Dry		0
[20:45-21:00]	22	46MPH	95 F	Dry		0
[21:00-21:15]	13	44MPH	93 F	Dry		0
[21:15-21:30]	11	43MPH	93 F	Dry		0
[21:30-21:45]	17	48MPH	93 F	Dry		0
[21:45-22:00]	15	49MPH	91 F	Dry		0
[22:00-22:15]	6	47MPH	91 F	Dry		0
[22:15-22:30]	9	50MPH	91 F	Dry		0
[22:30-22:45]	13	51MPH	91 F	Dry		0
[22:45-23:00]	10	48MPH	91 F	Dry		0
[23:00-23:15]	5	46MPH	91 F	Dry		0
[23:15-23:30]	6	52MPH	89 F	Dry		0
[23:30-23:45]	3	54MPH	89 F	Dry		0
[23:45-00:00]	2	50MPH	89 F	Dry		0
Wed,Jun/30/2010						
[00:00-00:15]	4	56MPH	89 F	Dry		0
[00:15-00:30]	4	51MPH	89 F	Dry		0
[00:30-00:45]	2	53MPH	89 F	Dry		0
[00:45-01:00]	1	48MPH	89 F	Dry		0
[01:00-01:15]	3	50MPH	89 F	Dry		0
[01:15-01:30]	4	54MPH	89 F	Dry		0
[01:30-01:45]	3	53MPH	89 F	Dry		0
[01:45-02:00]	2	43MPH	89 F	Dry		0
[02:00-02:15]	2	43MPH	89 F	Dry		0
[02:15-02:30]	3	30MPH	87 F	Dry		0
[02:30-02:45]	0	0MPH	87 F	Dry		0
[02:45-03:00]	5	49MPH	87 F	Dry		0
[03:00-03:15]	1	58MPH	87 F	Dry		0
[03:15-03:30]	0	0MPH	87 F	Dry		0
[03:30-03:45]	0	0MPH	87 F	Dry		0
[03:45-04:00]	2	53MPH	87 F	Dry		0
[04:00-04:15]	0	0MPH	87 F	Dry		0
[04:15-04:30]	2	50MPH	85 F	Dry		0
[04:30-04:45]	1	62MPH	85 F	Dry		0
[04:45-05:00]	1	52MPH	85 F	Dry		0
[05:00-05:15]	6	50MPH	85 F	Dry		0
[05:15-05:30]	3	49MPH	85 F	Dry		0
[05:30-05:45]	7	52MPH	85 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[05:45-06:00]	12	48MPH	85 F	Dry		0
[06:00-06:15]	18	49MPH	85 F	Dry		0
[06:15-06:30]	11	49MPH	85 F	Dry		0
[06:30-06:45]	21	50MPH	85 F	Dry		0
[06:45-07:00]	31	50MPH	85 F	Dry		0
[07:00-07:15]	56	50MPH	85 F	Dry		0
[07:15-07:30]	62	50MPH	85 F	Dry		0
[07:30-07:45]	67	48MPH	85 F	Dry		1
[07:45-08:00]	75	47MPH	85 F	Dry		1
[08:00-08:15]	52	51MPH	85 F	Dry		0
[08:15-08:30]	41	49MPH	85 F	Dry		0
[08:30-08:45]	45	49MPH	85 F	Dry		0
[08:45-09:00]	31	47MPH	87 F	Dry		0
[09:00-09:15]	31	47MPH	89 F	Dry		0
[09:15-09:30]	30	47MPH	91 F	Dry		0
[09:30-09:45]	33	50MPH	91 F	Dry		0
[09:45-10:00]	23	46MPH	93 F	Dry		0
[10:00-10:15]	30	50MPH	95 F	Dry		1
[10:15-10:30]	22	46MPH	97 F	Dry		0
[10:30-10:45]	20	49MPH	97 F	Dry		0
[10:45-11:00]	17	50MPH	97 F	Dry		0
[11:00-11:15]	24	46MPH	97 F	Dry		0
[11:15-11:30]	25	48MPH	97 F	Dry		0
[11:30-11:45]	23	46MPH	97 F	Dry		0
[11:45-12:00]	28	46MPH	97 F	Dry		0
[12:00-12:15]	22	45MPH	99 F	Dry		0
[12:15-12:30]	24	47MPH	101 F	Dry		0
[12:30-12:45]	29	48MPH	103 F	Dry		0
[12:45-13:00]	26	48MPH	101 F	Dry		0
[13:00-13:15]	35	46MPH	99 F	Dry		0
[13:15-13:30]	37	46MPH	93 F	Dry		0
[13:30-13:45]	26	48MPH	89 F	Dry		0
[13:45-14:00]	32	48MPH	89 F	Dry		0
[14:00-14:15]	33	46MPH	89 F	Dry		0
[14:15-14:30]	22	42MPH	87 F	Dry		0
[14:30-14:45]	30	46MPH	87 F	Dry		0
[14:45-15:00]	28	47MPH	89 F	Dry		0
[15:00-15:15]	31	46MPH	89 F	Dry		0
[15:15-15:30]	32	50MPH	89 F	Dry		0
[15:30-15:45]	27	47MPH	91 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[15:45-16:00]	15	48MPH	91 F	Dry		0
[16:00-16:15]	31	46MPH	93 F	Dry		0
[16:15-16:30]	26	48MPH	93 F	Dry		0
[16:30-16:45]	29	46MPH	93 F	Dry		0
[16:45-17:00]	34	49MPH	93 F	Dry		0
[17:00-17:15]	36	48MPH	95 F	Dry		0
[17:15-17:30]	50	49MPH	95 F	Dry		0
[17:30-17:45]	37	50MPH	95 F	Dry		0
[17:45-18:00]	43	50MPH	95 F	Dry		0
[18:00-18:15]	32	47MPH	97 F	Dry		0
[18:15-18:30]	37	50MPH	97 F	Dry		0
[18:30-18:45]	38	48MPH	97 F	Dry		0
[18:45-19:00]	48	47MPH	97 F	Dry		0
[19:00-19:15]	41	50MPH	95 F	Dry		0
[19:15-19:30]	33	51MPH	95 F	Dry		0
[19:30-19:45]	28	48MPH	93 F	Dry		0
[19:45-20:00]	23	53MPH	93 F	Dry		0
[20:00-20:15]	28	50MPH	91 F	Dry		0
[20:15-20:30]	33	45MPH	91 F	Dry		0
[20:30-20:45]	22	47MPH	89 F	Dry		0
[20:45-21:00]	18	46MPH	89 F	Dry		0
[21:00-21:15]	14	46MPH	89 F	Dry		0
[21:15-21:30]	21	48MPH	89 F	Dry		0
[21:30-21:45]	18	42MPH	89 F	Dry		0
[21:45-22:00]	9	49MPH	87 F	Dry		0
[22:00-22:15]	5	44MPH	85 F	Dry		0
[22:15-22:30]	10	38MPH	80 F	Dry		0
[22:30-22:45]	6	36MPH	80 F	Dry		0
[22:45-23:00]	7	43MPH	82 F	Dry		0
[23:00-23:15]	13	46MPH	82 F	Dry		0
[23:15-23:30]	4	35MPH	82 F	Dry		0
[23:30-23:45]	4	45MPH	82 F	Dry		0
[23:45-00:00]	5	35MPH	82 F	Dry		0
Thu,Jul/01/2010						
[00:00-00:15]	4	46MPH	82 F	Dry		0
[00:15-00:30]	2	48MPH	82 F	Dry		0
[00:30-00:45]	1	42MPH	82 F	Dry		0
[00:45-01:00]	1	75MPH	82 F	Dry		0
[01:00-01:15]	4	50MPH	82 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[01:15-01:30]	2	53MPH	82 F	Dry		0
[01:30-01:45]	1	42MPH	82 F	Dry		0
[01:45-02:00]	1	42MPH	82 F	Dry		0
[02:00-02:15]	2	53MPH	82 F	Dry		0
[02:15-02:30]	1	48MPH	82 F	Dry		0
[02:30-02:45]	0	0MPH	82 F	Dry		0
[02:45-03:00]	0	0MPH	82 F	Dry		0
[03:00-03:15]	0	0MPH	82 F	Dry		0
[03:15-03:30]	1	52MPH	82 F	Dry		0
[03:30-03:45]	1	42MPH	82 F	Dry		0
[03:45-04:00]	1	28MPH	82 F	Dry		0
[04:00-04:15]	0	0MPH	82 F	Dry		0
[04:15-04:30]	0	0MPH	82 F	Dry		0
[04:30-04:45]	2	50MPH	80 F	Dry		0
[04:45-05:00]	1	48MPH	80 F	Dry		0
[05:00-05:15]	6	50MPH	80 F	Dry		0
[05:15-05:30]	2	55MPH	82 F	Dry		0
[05:30-05:45]	6	52MPH	82 F	Dry		0
[05:45-06:00]	8	50MPH	82 F	Dry		0
[06:00-06:15]	10	48MPH	82 F	Dry		0
[06:15-06:30]	15	51MPH	80 F	Dry		0
[06:30-06:45]	21	48MPH	80 F	Dry		0
[06:45-07:00]	27	48MPH	80 F	Dry		0
[07:00-07:15]	47	47MPH	80 F	Dry		0
[07:15-07:30]	72	47MPH	80 F	Dry		1
[07:30-07:45]	73	50MPH	82 F	Dry		1
[07:45-08:00]	72	47MPH	82 F	Dry		1
[08:00-08:15]	48	49MPH	82 F	Dry		0
[08:15-08:30]	41	46MPH	82 F	Dry		0
[08:30-08:45]	44	47MPH	82 F	Dry		0
[08:45-09:00]	35	49MPH	82 F	Dry		0
[09:00-09:15]	26	45MPH	82 F	Dry		0
[09:15-09:30]	26	45MPH	82 F	Dry		0
[09:30-09:45]	20	46MPH	82 F	Dry		0
[09:45-10:00]	19	47MPH	83 F	Dry		0
[10:00-10:15]	20	48MPH	83 F	Dry		0
[10:15-10:30]	23	47MPH	83 F	Dry		0
[10:30-10:45]	20	47MPH	83 F	Dry		0
[10:45-11:00]	24	47MPH	85 F	Dry		0
[11:00-11:15]	20	47MPH	85 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[11:15-11:30]	22	47MPH	87 F	Dry		0
[11:30-11:45]	22	44MPH	89 F	Dry		0
[11:45-12:00]	26	47MPH	91 F	Dry		0
[12:00-12:15]	23	46MPH	89 F	Dry		0
[12:15-12:30]	30	44MPH	87 F	Dry		0
[12:30-12:45]	32	44MPH	87 F	Dry		0
[12:45-13:00]	32	43MPH	85 F	Dry		0
[13:00-13:15]	20	44MPH	85 F	Dry		0
[13:15-13:30]	29	47MPH	85 F	Dry		0
[13:30-13:45]	26	48MPH	83 F	Dry		0
[13:45-14:00]	33	46MPH	83 F	Dry		0
[14:00-14:15]	22	49MPH	85 F	Dry		0
[14:15-14:30]	19	46MPH	87 F	Dry		0
[14:30-14:45]	29	46MPH	87 F	Dry		0
[14:45-15:00]	37	47MPH	87 F	Dry		0
[15:00-15:15]	25	45MPH	89 F	Dry		0
[15:15-15:30]	27	48MPH	91 F	Dry		0
[15:30-15:45]	25	48MPH	93 F	Dry		0
[15:45-16:00]	23	49MPH	93 F	Dry		0
[16:00-16:15]	45	48MPH	91 F	Dry		0
[16:15-16:30]	39	46MPH	89 F	Dry		0
[16:30-16:45]	37	47MPH	89 F	Dry		0
[16:45-17:00]	30	48MPH	89 F	Dry		0
[17:00-17:15]	43	49MPH	89 F	Dry		0
[17:15-17:30]	37	48MPH	87 F	Dry		4
[17:30-17:45]	36	50MPH	89 F	Dry		3
[17:45-18:00]	47	47MPH	89 F	Dry		0
[18:00-18:15]	32	47MPH	89 F	Dry		0
[18:15-18:30]	35	44MPH	87 F	Dry		0
[18:30-18:45]	29	45MPH	85 F	Dry		0
[18:45-19:00]	28	47MPH	85 F	Dry		0
[19:00-19:15]	21	47MPH	83 F	Dry		0
[19:15-19:30]	29	46MPH	83 F	Dry		0
[19:30-19:45]	33	46MPH	83 F	Dry		0
[19:45-20:00]	32	46MPH	82 F	Dry		0
[20:00-20:15]	29	50MPH	82 F	Dry		0
[20:15-20:30]	31	45MPH	82 F	Dry		0
[20:30-20:45]	14	47MPH	82 F	Dry		0
[20:45-21:00]	21	48MPH	82 F	Dry		0
[21:00-21:15]	15	45MPH	82 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6285
County: Leon	AADT Factor: 1	AADT Count: 2,095

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[21:15-21:30]	17	46 MPH	82 F	Dry		0
[21:30-21:45]	14	49 MPH	82 F	Dry		0
[21:45-22:00]	17	47 MPH	82 F	Dry		0
[22:00-22:15]	14	48 MPH	82 F	Dry		0
[22:15-22:30]	8	50 MPH	82 F	Dry		0
[22:30-22:45]	7	45 MPH	82 F	Dry		0
[22:45-23:00]	9	44 MPH	82 F	Dry		0
[23:00-23:15]	14	50 MPH	80 F	Dry		0
[23:15-23:30]	4	52 MPH	80 F	Dry		0
[23:30-23:45]	9	51 MPH	80 F	Dry		0
[23:45-00:00]	6	52 MPH	80 F	Dry		0
	6285	48 MPH	89 F			

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[00:00-00:15]	13	49MPH	83 F	Dry		0
[00:15-00:30]	3	54MPH	83 F	Dry		0
[00:30-00:45]	3	56MPH	83 F	Dry		0
[00:45-01:00]	8	46MPH	83 F	Dry		0
[01:00-01:15]	3	53MPH	83 F	Dry		0
[01:15-01:30]	5	45MPH	83 F	Dry		0
[01:30-01:45]	7	51MPH	83 F	Dry		0
[01:45-02:00]	3	49MPH	83 F	Dry		0
[02:00-02:15]	3	53MPH	83 F	Dry		0
[02:15-02:30]	5	53MPH	83 F	Dry		0
[02:30-02:45]	3	58MPH	83 F	Dry		0
[02:45-03:00]	3	49MPH	83 F	Dry		0
[03:00-03:15]	1	52MPH	83 F	Dry		0
[03:15-03:30]	0	0MPH	83 F	Dry		0
[03:30-03:45]	3	51MPH	83 F	Dry		0
[03:45-04:00]	0	0MPH	83 F	Dry		0
[04:00-04:15]	1	52MPH	83 F	Dry		0
[04:15-04:30]	1	52MPH	83 F	Dry		0
[04:30-04:45]	1	38MPH	83 F	Dry		0
[04:45-05:00]	2	47MPH	83 F	Dry		0
[05:00-05:15]	2	57MPH	83 F	Dry		0
[05:15-05:30]	5	46MPH	83 F	Dry		0
[05:30-05:45]	4	54MPH	83 F	Dry		0
[05:45-06:00]	6	39MPH	83 F	Dry		0
[06:00-06:15]	6	44MPH	83 F	Dry		0
[06:15-06:30]	5	48MPH	83 F	Dry		0
[06:30-06:45]	15	46MPH	83 F	Dry		0
[06:45-07:00]	16	49MPH	82 F	Dry		0
[07:00-07:15]	21	44MPH	83 F	Dry		0
[07:15-07:30]	32	47MPH	83 F	Dry		0
[07:30-07:45]	29	45MPH	83 F	Dry		0
[07:45-08:00]	39	48MPH	83 F	Dry		0
[08:00-08:15]	28	42MPH	83 F	Dry		0
[08:15-08:30]	42	48MPH	85 F	Dry		0
[08:30-08:45]	40	47MPH	85 F	Dry		0
[08:45-09:00]	45	46MPH	87 F	Dry		0
[09:00-09:15]	49	46MPH	89 F	Dry		0
[09:15-09:30]	47	45MPH	91 F	Dry		0
[09:30-09:45]	42	47MPH	93 F	Dry		0
[09:45-10:00]	52	46MPH	95 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[10:00-10:15]	31	47MPH	97 F	Dry		0
[10:15-10:30]	38	47MPH	101 F	Dry		0
[10:30-10:45]	58	47MPH	101 F	Dry		1
[10:45-11:00]	45	45MPH	103 F	Dry		0
[11:00-11:15]	47	45MPH	103 F	Dry		0
[11:15-11:30]	59	48MPH	103 F	Dry		0
[11:30-11:45]	58	46MPH	103 F	Dry		1
[11:45-12:00]	46	50MPH	107 F	Dry		0
[12:00-12:15]	64	49MPH	107 F	Dry		1
[12:15-12:30]	67	48MPH	107 F	Dry		1
[12:30-12:45]	74	45MPH	109 F	Dry		1
[12:45-13:00]	73	47MPH	107 F	Dry		1
[13:00-13:15]	52	48MPH	109 F	Dry		0
[13:15-13:30]	73	48MPH	113 F	Dry		1
[13:30-13:45]	75	47MPH	111 F	Dry		2
[13:45-14:00]	69	47MPH	109 F	Dry		1
[14:00-14:15]	67	45MPH	107 F	Dry		1
[14:15-14:30]	67	46MPH	103 F	Dry		15
[14:30-14:45]	80	45MPH	101 F	Dry		1
[14:45-15:00]	72	46MPH	101 F	Dry		1
[15:00-15:15]	86	44MPH	97 F	Dry		1
[15:15-15:30]	81	46MPH	97 F	Dry		1
[15:30-15:45]	83	46MPH	97 F	Dry		1
[15:45-16:00]	79	48MPH	99 F	Dry		1
[16:00-16:15]	80	47MPH	99 F	Dry		1
[16:15-16:30]	87	48MPH	99 F	Dry		1
[16:30-16:45]	119	45MPH	99 F	Dry		2
[16:45-17:00]	106	47MPH	99 F	Dry		1
[17:00-17:15]	137	48MPH	99 F	Dry		2
[17:15-17:30]	149	46MPH	97 F	Dry		2
[17:30-17:45]	135	46MPH	97 F	Dry		2
[17:45-18:00]	150	46MPH	97 F	Dry		2
[18:00-18:15]	139	44MPH	97 F	Dry		2
[18:15-18:30]	125	47MPH	97 F	Dry		2
[18:30-18:45]	129	46MPH	97 F	Dry		2
[18:45-19:00]	123	45MPH	97 F	Dry		2
[19:00-19:15]	77	46MPH	97 F	Dry		1
[19:15-19:30]	106	46MPH	97 F	Dry		1
[19:30-19:45]	85	47MPH	95 F	Dry		1
[19:45-20:00]	79	47MPH	95 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[20:00-20:15]	85	47MPH	93 F	Dry		1
[20:15-20:30]	80	46MPH	93 F	Dry		1
[20:30-20:45]	64	47MPH	91 F	Dry		1
[20:45-21:00]	95	45MPH	91 F	Dry		1
[21:00-21:15]	66	47MPH	91 F	Dry		1
[21:15-21:30]	56	46MPH	91 F	Dry		0
[21:30-21:45]	39	46MPH	89 F	Dry		0
[21:45-22:00]	52	46MPH	89 F	Dry		0
[22:00-22:15]	36	48MPH	89 F	Dry		0
[22:15-22:30]	31	49MPH	89 F	Dry		0
[22:30-22:45]	21	46MPH	89 F	Dry		0
[22:45-23:00]	20	48MPH	89 F	Dry		0
[23:00-23:15]	20	46MPH	87 F	Dry		0
[23:15-23:30]	19	47MPH	87 F	Dry		0
[23:30-23:45]	16	49MPH	87 F	Dry		0
[23:45-00:00]	5	46MPH	87 F	Dry		0
Wed,Jun/30/2010						
[00:00-00:15]	7	50MPH	87 F	Dry		0
[00:15-00:30]	6	55MPH	87 F	Dry		0
[00:30-00:45]	11	47MPH	85 F	Dry		0
[00:45-01:00]	7	48MPH	85 F	Dry		0
[01:00-01:15]	7	48MPH	85 F	Dry		0
[01:15-01:30]	10	48MPH	85 F	Dry		0
[01:30-01:45]	6	48MPH	85 F	Dry		0
[01:45-02:00]	2	53MPH	85 F	Dry		0
[02:00-02:15]	5	46MPH	85 F	Dry		0
[02:15-02:30]	7	48MPH	85 F	Dry		0
[02:30-02:45]	5	46MPH	85 F	Dry		0
[02:45-03:00]	13	48MPH	85 F	Dry		0
[03:00-03:15]	4	59MPH	85 F	Dry		0
[03:15-03:30]	1	42MPH	85 F	Dry		0
[03:30-03:45]	0	0MPH	83 F	Dry		0
[03:45-04:00]	2	58MPH	83 F	Dry		0
[04:00-04:15]	0	0MPH	83 F	Dry		0
[04:15-04:30]	1	38MPH	83 F	Dry		0
[04:30-04:45]	0	0MPH	83 F	Dry		0
[04:45-05:00]	3	53MPH	83 F	Dry		0
[05:00-05:15]	2	48MPH	83 F	Dry		0
[05:15-05:30]	5	46MPH	83 F	Dry		0
[05:30-05:45]	4	52MPH	83 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[05:45-06:00]	12	46MPH	83 F	Dry		0
[06:00-06:15]	8	48MPH	83 F	Dry		0
[06:15-06:30]	7	48MPH	82 F	Dry		0
[06:30-06:45]	14	46MPH	82 F	Dry		0
[06:45-07:00]	22	50MPH	82 F	Dry		0
[07:00-07:15]	23	47MPH	83 F	Dry		0
[07:15-07:30]	30	46MPH	83 F	Dry		0
[07:30-07:45]	28	43MPH	83 F	Dry		0
[07:45-08:00]	48	44MPH	83 F	Dry		0
[08:00-08:15]	35	47MPH	83 F	Dry		0
[08:15-08:30]	30	44MPH	83 F	Dry		0
[08:30-08:45]	28	46MPH	83 F	Dry		0
[08:45-09:00]	46	45MPH	85 F	Dry		0
[09:00-09:15]	40	47MPH	85 F	Dry		0
[09:15-09:30]	44	46MPH	89 F	Dry		0
[09:30-09:45]	35	46MPH	89 F	Dry		11
[09:45-10:00]	42	45MPH	91 F	Dry		0
[10:00-10:15]	40	46MPH	93 F	Dry		0
[10:15-10:30]	46	45MPH	95 F	Dry		0
[10:30-10:45]	44	46MPH	95 F	Dry		0
[10:45-11:00]	45	47MPH	97 F	Dry		0
[11:00-11:15]	44	48MPH	95 F	Dry		0
[11:15-11:30]	48	47MPH	97 F	Dry		0
[11:30-11:45]	67	46MPH	97 F	Dry		1
[11:45-12:00]	47	47MPH	97 F	Dry		0
[12:00-12:15]	65	47MPH	97 F	Dry		1
[12:15-12:30]	71	45MPH	101 F	Dry		1
[12:30-12:45]	75	46MPH	99 F	Dry		1
[12:45-13:00]	83	46MPH	97 F	Dry		1
[13:00-13:15]	69	40MPH	97 F	Dry		1
[13:15-13:30]	72	44MPH	93 F	Dry		1
[13:30-13:45]	75	45MPH	91 F	Dry		1
[13:45-14:00]	68	44MPH	89 F	Dry		1
[14:00-14:15]	65	44MPH	89 F	Dry		1
[14:15-14:30]	56	44MPH	87 F	Dry		1
[14:30-14:45]	66	44MPH	87 F	Dry		1
[14:45-15:00]	74	44MPH	87 F	Dry		1
[15:00-15:15]	71	46MPH	87 F	Dry		1
[15:15-15:30]	64	47MPH	89 F	Dry		1
[15:30-15:45]	65	45MPH	89 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[15:45-16:00]	76	46MPH	89 F	Dry		1
[16:00-16:15]	95	47MPH	91 F	Dry		1
[16:15-16:30]	85	48MPH	91 F	Dry		1
[16:30-16:45]	99	47MPH	91 F	Dry		1
[16:45-17:00]	90	48MPH	91 F	Dry		1
[17:00-17:15]	106	46MPH	91 F	Dry		1
[17:15-17:30]	143	46MPH	91 F	Dry		2
[17:30-17:45]	135	45MPH	91 F	Dry		2
[17:45-18:00]	131	45MPH	91 F	Dry		2
[18:00-18:15]	151	46MPH	93 F	Dry		2
[18:15-18:30]	134	46MPH	95 F	Dry		2
[18:30-18:45]	138	46MPH	95 F	Dry		2
[18:45-19:00]	125	45MPH	95 F	Dry		2
[19:00-19:15]	106	47MPH	93 F	Dry		1
[19:15-19:30]	98	47MPH	91 F	Dry		1
[19:30-19:45]	88	47MPH	91 F	Dry		1
[19:45-20:00]	76	47MPH	89 F	Dry		1
[20:00-20:15]	85	45MPH	89 F	Dry		1
[20:15-20:30]	86	45MPH	89 F	Dry		1
[20:30-20:45]	55	46MPH	89 F	Dry		0
[20:45-21:00]	72	46MPH	87 F	Dry		1
[21:00-21:15]	64	45MPH	87 F	Dry		1
[21:15-21:30]	62	46MPH	87 F	Dry		1
[21:30-21:45]	53	47MPH	85 F	Dry		0
[21:45-22:00]	50	39MPH	83 F	Dry		1
[22:00-22:15]	38	41MPH	80 F	Dry		0
[22:15-22:30]	35	42MPH	80 F	Dry		0
[22:30-22:45]	34	44MPH	82 F	Dry		0
[22:45-23:00]	38	42MPH	82 F	Dry		0
[23:00-23:15]	26	44MPH	82 F	Dry		0
[23:15-23:30]	17	46MPH	82 F	Dry		0
[23:30-23:45]	14	47MPH	82 F	Dry		0
[23:45-00:00]	10	42MPH	82 F	Dry		0
Thu,Jul/01/2010						
[00:00-00:15]	16	48MPH	80 F	Dry		0
[00:15-00:30]	5	46MPH	80 F	Dry		0
[00:30-00:45]	6	46MPH	80 F	Dry		0
[00:45-01:00]	6	45MPH	80 F	Dry		0
[01:00-01:15]	8	43MPH	80 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[01:15-01:30]	4	44MPH	80 F	Dry		0
[01:30-01:45]	3	51MPH	80 F	Dry		0
[01:45-02:00]	7	47MPH	80 F	Dry		0
[02:00-02:15]	4	48MPH	80 F	Dry		0
[02:15-02:30]	2	43MPH	80 F	Dry		0
[02:30-02:45]	3	48MPH	80 F	Dry		0
[02:45-03:00]	4	46MPH	80 F	Dry		0
[03:00-03:15]	1	38MPH	80 F	Dry		0
[03:15-03:30]	4	48MPH	80 F	Dry		0
[03:30-03:45]	2	33MPH	80 F	Dry		0
[03:45-04:00]	0	0MPH	80 F	Dry		0
[04:00-04:15]	2	38MPH	80 F	Dry		0
[04:15-04:30]	3	43MPH	80 F	Dry		0
[04:30-04:45]	0	0MPH	80 F	Dry		0
[04:45-05:00]	3	40MPH	80 F	Dry		0
[05:00-05:15]	3	51MPH	80 F	Dry		0
[05:15-05:30]	6	46MPH	80 F	Dry		0
[05:30-05:45]	4	53MPH	80 F	Dry		0
[05:45-06:00]	2	55MPH	80 F	Dry		0
[06:00-06:15]	6	45MPH	80 F	Dry		0
[06:15-06:30]	9	44MPH	80 F	Dry		0
[06:30-06:45]	11	47MPH	80 F	Dry		0
[06:45-07:00]	14	51MPH	80 F	Dry		0
[07:00-07:15]	19	47MPH	80 F	Dry		0
[07:15-07:30]	30	44MPH	80 F	Dry		0
[07:30-07:45]	33	45MPH	80 F	Dry		0
[07:45-08:00]	36	46MPH	80 F	Dry		0
[08:00-08:15]	34	46MPH	80 F	Dry		0
[08:15-08:30]	35	44MPH	80 F	Dry		0
[08:30-08:45]	41	45MPH	80 F	Dry		0
[08:45-09:00]	40	44MPH	80 F	Dry		0
[09:00-09:15]	35	46MPH	80 F	Dry		0
[09:15-09:30]	36	46MPH	82 F	Dry		0
[09:30-09:45]	29	45MPH	82 F	Dry		0
[09:45-10:00]	47	47MPH	82 F	Dry		0
[10:00-10:15]	32	44MPH	82 F	Dry		0
[10:15-10:30]	49	46MPH	83 F	Dry		0
[10:30-10:45]	39	43MPH	83 F	Dry		0
[10:45-11:00]	49	45MPH	83 F	Dry		0
[11:00-11:15]	50	44MPH	83 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[11:15-11:30]	47	48MPH	85 F	Dry		0
[11:30-11:45]	58	43MPH	87 F	Dry		1
[11:45-12:00]	52	48MPH	87 F	Dry		0
[12:00-12:15]	51	43MPH	83 F	Dry		0
[12:15-12:30]	62	45MPH	83 F	Dry		1
[12:30-12:45]	75	42MPH	83 F	Dry		1
[12:45-13:00]	73	44MPH	83 F	Dry		1
[13:00-13:15]	73	45MPH	83 F	Dry		1
[13:15-13:30]	76	44MPH	83 F	Dry		1
[13:30-13:45]	76	42MPH	82 F	Dry		1
[13:45-14:00]	65	45MPH	82 F	Dry		1
[14:00-14:15]	67	45MPH	83 F	Dry		1
[14:15-14:30]	65	44MPH	83 F	Dry		1
[14:30-14:45]	63	46MPH	85 F	Dry		1
[14:45-15:00]	72	46MPH	87 F	Dry		1
[15:00-15:15]	73	45MPH	89 F	Dry		1
[15:15-15:30]	69	46MPH	91 F	Dry		1
[15:30-15:45]	56	47MPH	97 F	Dry		0
[15:45-16:00]	83	47MPH	93 F	Dry		1
[16:00-16:15]	99	47MPH	91 F	Dry		1
[16:15-16:30]	104	46MPH	91 F	Dry		1
[16:30-16:45]	115	47MPH	91 F	Dry		1
[16:45-17:00]	114	46MPH	93 F	Dry		1
[17:00-17:15]	109	46MPH	93 F	Dry		1
[17:15-17:30]	150	46MPH	93 F	Dry		3
[17:30-17:45]	132	46MPH	91 F	Dry		2
[17:45-18:00]	150	46MPH	91 F	Dry		3
[18:00-18:15]	138	45MPH	91 F	Dry		2
[18:15-18:30]	140	44MPH	89 F	Dry		2
[18:30-18:45]	118	45MPH	89 F	Dry		2
[18:45-19:00]	96	46MPH	87 F	Dry		1
[19:00-19:15]	74	46MPH	85 F	Dry		1
[19:15-19:30]	108	44MPH	85 F	Dry		2
[19:30-19:45]	99	46MPH	83 F	Dry		2
[19:45-20:00]	91	45MPH	83 F	Dry		1
[20:00-20:15]	99	43MPH	83 F	Dry		1
[20:15-20:30]	81	45MPH	83 F	Dry		1
[20:30-20:45]	73	45MPH	83 F	Dry		1
[20:45-21:00]	70	43MPH	82 F	Dry		1
[21:00-21:15]	53	44MPH	82 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: WB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13932
County: Leon	AADT Factor: 1	AADT Count: 4,644

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[21:15-21:30]	65	44 MPH	82 F	Dry		1
[21:30-21:45]	45	45 MPH	82 F	Dry		0
[21:45-22:00]	45	48 MPH	82 F	Dry		0
[22:00-22:15]	41	46 MPH	82 F	Dry		0
[22:15-22:30]	29	46 MPH	82 F	Dry		0
[22:30-22:45]	34	47 MPH	82 F	Dry		0
[22:45-23:00]	30	47 MPH	80 F	Dry		0
[23:00-23:15]	34	48 MPH	80 F	Dry		0
[23:15-23:30]	28	47 MPH	80 F	Dry		0
[23:30-23:45]	24	49 MPH	80 F	Dry		0
[23:45-00:00]	13	46 MPH	80 F	Dry		0
	13932	46 MPH	88 F			

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Tue,Jun/29/2010				
[00:00-00:15]	10	49 MPH	83 F	Dry
[00:15-00:30]	8	46 MPH	83 F	Dry
[00:30-00:45]	6	48 MPH	83 F	Dry
[00:45-01:00]	9	49 MPH	83 F	Dry
[01:00-01:15]	12	47 MPH	83 F	Dry
[01:15-01:30]	5	44 MPH	83 F	Dry
[01:30-01:45]	3	46 MPH	83 F	Dry
[01:45-02:00]	4	47 MPH	83 F	Dry
[02:00-02:15]	7	49 MPH	83 F	Dry
[02:15-02:30]	5	56 MPH	83 F	Dry
[02:30-02:45]	3	51 MPH	83 F	Dry
[02:45-03:00]	4	52 MPH	83 F	Dry
[03:00-03:15]	3	54 MPH	83 F	Dry
[03:15-03:30]	3	51 MPH	83 F	Dry
[03:30-03:45]	6	51 MPH	83 F	Dry
[03:45-04:00]	8	45 MPH	83 F	Dry
[04:00-04:15]	8	51 MPH	83 F	Dry
[04:15-04:30]	14	50 MPH	82 F	Dry
[04:30-04:45]	11	51 MPH	82 F	Dry
[04:45-05:00]	19	50 MPH	82 F	Dry
[05:00-05:15]	15	50 MPH	82 F	Dry
[05:15-05:30]	28	47 MPH	82 F	Dry
[05:30-05:45]	38	46 MPH	82 F	Dry
[05:45-06:00]	55	48 MPH	82 F	Dry
[06:00-06:15]	68	46 MPH	82 F	Dry
[06:15-06:30]	89	47 MPH	82 F	Dry
[06:30-06:45]	148	46 MPH	82 F	Dry
[06:45-07:00]	170	45 MPH	82 F	Dry
[07:00-07:15]	239	45 MPH	82 F	Dry
[07:15-07:30]	281	44 MPH	83 F	Dry
[07:30-07:45]	300	45 MPH	83 F	Dry
[07:45-08:00]	291	44 MPH	83 F	Dry
[08:00-08:15]	284	45 MPH	83 F	Dry
[08:15-08:30]	236	45 MPH	83 F	Dry
[08:30-08:45]	203	45 MPH	85 F	Dry
[08:45-09:00]	189	45 MPH	85 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Tue,Jun/29/2010				
[09:00-09:15]	158	47 MPH	87 F	Dry
[09:15-09:30]	157	46 MPH	89 F	Dry
[09:30-09:45]	134	47 MPH	91 F	Dry
[09:45-10:00]	154	47 MPH	91 F	Dry
[10:00-10:15]	113	45 MPH	95 F	Dry
[10:15-10:30]	131	48 MPH	97 F	Dry
[10:30-10:45]	108	47 MPH	97 F	Dry
[10:45-11:00]	125	48 MPH	99 F	Dry
[11:00-11:15]	113	46 MPH	99 F	Dry
[11:15-11:30]	143	46 MPH	99 F	Dry
[11:30-11:45]	144	47 MPH	99 F	Dry
[11:45-12:00]	114	46 MPH	101 F	Dry
[12:00-12:15]	128	44 MPH	103 F	Dry
[12:15-12:30]	115	46 MPH	105 F	Dry
[12:30-12:45]	113	45 MPH	105 F	Dry
[12:45-13:00]	127	45 MPH	105 F	Dry
[13:00-13:15]	141	47 MPH	105 F	Dry
[13:15-13:30]	134	46 MPH	107 F	Dry
[13:30-13:45]	108	43 MPH	107 F	Dry
[13:45-14:00]	128	45 MPH	107 F	Dry
[14:00-14:15]	109	46 MPH	105 F	Dry
[14:15-14:30]	113	46 MPH	103 F	Dry
[14:30-14:45]	101	48 MPH	101 F	Dry
[14:45-15:00]	116	47 MPH	99 F	Dry
[15:00-15:15]	96	45 MPH	97 F	Dry
[15:15-15:30]	100	47 MPH	99 F	Dry
[15:30-15:45]	89	46 MPH	101 F	Dry
[15:45-16:00]	101	47 MPH	101 F	Dry
[16:00-16:15]	105	47 MPH	101 F	Dry
[16:15-16:30]	115	45 MPH	101 F	Dry
[16:30-16:45]	112	38 MPH	101 F	Dry
[16:45-17:00]	120	45 MPH	101 F	Dry
[17:00-17:15]	130	48 MPH	99 F	Dry
[17:15-17:30]	122	45 MPH	99 F	Dry
[17:30-17:45]	125	42 MPH	97 F	Dry
[17:45-18:00]	122	45 MPH	97 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Tue,Jun/29/2010				
[18:00-18:15]	130	45 MPH	97 F	Dry
[18:15-18:30]	125	46 MPH	97 F	Dry
[18:30-18:45]	99	46 MPH	97 F	Dry
[18:45-19:00]	101	44 MPH	97 F	Dry
[19:00-19:15]	106	48 MPH	97 F	Dry
[19:15-19:30]	91	47 MPH	97 F	Dry
[19:30-19:45]	96	46 MPH	95 F	Dry
[19:45-20:00]	80	48 MPH	95 F	Dry
[20:00-20:15]	100	46 MPH	95 F	Dry
[20:15-20:30]	78	47 MPH	93 F	Dry
[20:30-20:45]	78	47 MPH	93 F	Dry
[20:45-21:00]	63	45 MPH	91 F	Dry
[21:00-21:15]	74	45 MPH	91 F	Dry
[21:15-21:30]	50	45 MPH	91 F	Dry
[21:30-21:45]	36	45 MPH	89 F	Dry
[21:45-22:00]	28	47 MPH	89 F	Dry
[22:00-22:15]	32	48 MPH	89 F	Dry
[22:15-22:30]	20	48 MPH	89 F	Dry
[22:30-22:45]	30	45 MPH	89 F	Dry
[22:45-23:00]	21	47 MPH	87 F	Dry
[23:00-23:15]	26	49 MPH	87 F	Dry
[23:15-23:30]	16	49 MPH	87 F	Dry
[23:30-23:45]	9	50 MPH	87 F	Dry
[23:45-00:00]	18	47 MPH	87 F	Dry
Tue,Jun/29/2010	8653	46 MPH	91 F	
Wed,Jun/30/2010				
[00:00-00:15]	14	44 MPH	85 F	Dry
[00:15-00:30]	9	50 MPH	85 F	Dry
[00:30-00:45]	12	44 MPH	85 F	Dry
[00:45-01:00]	15	46 MPH	85 F	Dry
[01:00-01:15]	10	45 MPH	85 F	Dry
[01:15-01:30]	6	45 MPH	85 F	Dry
[01:30-01:45]	2	50 MPH	85 F	Dry
[01:45-02:00]	4	58 MPH	85 F	Dry
[02:00-02:15]	5	48 MPH	85 F	Dry
[02:15-02:30]	4	39 MPH	85 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Wed,Jun/30/2010				
[02:30-02:45]	6	53 MPH	85 F	Dry
[02:45-03:00]	15	47 MPH	85 F	Dry
[03:00-03:15]	7	49 MPH	83 F	Dry
[03:15-03:30]	4	49 MPH	83 F	Dry
[03:30-03:45]	6	51 MPH	83 F	Dry
[03:45-04:00]	7	49 MPH	83 F	Dry
[04:00-04:15]	6	48 MPH	83 F	Dry
[04:15-04:30]	6	56 MPH	83 F	Dry
[04:30-04:45]	10	53 MPH	83 F	Dry
[04:45-05:00]	21	50 MPH	83 F	Dry
[05:00-05:15]	18	48 MPH	83 F	Dry
[05:15-05:30]	38	48 MPH	83 F	Dry
[05:30-05:45]	41	48 MPH	83 F	Dry
[05:45-06:00]	37	49 MPH	82 F	Dry
[06:00-06:15]	74	45 MPH	82 F	Dry
[06:15-06:30]	75	46 MPH	82 F	Dry
[06:30-06:45]	161	46 MPH	82 F	Dry
[06:45-07:00]	166	48 MPH	82 F	Dry
[07:00-07:15]	241	46 MPH	82 F	Dry
[07:15-07:30]	264	45 MPH	83 F	Dry
[07:30-07:45]	308	41 MPH	83 F	Dry
[07:45-08:00]	261	45 MPH	83 F	Dry
[08:00-08:15]	268	45 MPH	83 F	Dry
[08:15-08:30]	223	46 MPH	83 F	Dry
[08:30-08:45]	198	46 MPH	83 F	Dry
[08:45-09:00]	209	46 MPH	83 F	Dry
[09:00-09:15]	163	47 MPH	85 F	Dry
[09:15-09:30]	157	47 MPH	87 F	Dry
[09:30-09:45]	161	45 MPH	87 F	Dry
[09:45-10:00]	136	45 MPH	89 F	Dry
[10:00-10:15]	124	47 MPH	91 F	Dry
[10:15-10:30]	121	47 MPH	93 F	Dry
[10:30-10:45]	119	46 MPH	93 F	Dry
[10:45-11:00]	126	46 MPH	95 F	Dry
[11:00-11:15]	117	45 MPH	95 F	Dry
[11:15-11:30]	127	45 MPH	95 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Wed,Jun/30/2010				
[11:30-11:45]	127	46 MPH	95 F	Dry
[11:45-12:00]	125	47 MPH	97 F	Dry
[12:00-12:15]	133	47 MPH	99 F	Dry
[12:15-12:30]	138	46 MPH	101 F	Dry
[12:30-12:45]	111	49 MPH	101 F	Dry
[12:45-13:00]	114	45 MPH	99 F	Dry
[13:00-13:15]	146	43 MPH	97 F	Dry
[13:15-13:30]	128	42 MPH	93 F	Dry
[13:30-13:45]	117	42 MPH	91 F	Dry
[13:45-14:00]	108	44 MPH	89 F	Dry
[14:00-14:15]	113	44 MPH	87 F	Dry
[14:15-14:30]	105	44 MPH	87 F	Dry
[14:30-14:45]	103	46 MPH	85 F	Dry
[14:45-15:00]	96	44 MPH	85 F	Dry
[15:00-15:15]	101	43 MPH	87 F	Dry
[15:15-15:30]	94	45 MPH	87 F	Dry
[15:30-15:45]	88	46 MPH	87 F	Dry
[15:45-16:00]	82	46 MPH	89 F	Dry
[16:00-16:15]	97	46 MPH	91 F	Dry
[16:15-16:30]	114	45 MPH	91 F	Dry
[16:30-16:45]	107	47 MPH	91 F	Dry
[16:45-17:00]	103	47 MPH	91 F	Dry
[17:00-17:15]	116	45 MPH	91 F	Dry
[17:15-17:30]	125	45 MPH	91 F	Dry
[17:30-17:45]	132	46 MPH	91 F	Dry
[17:45-18:00]	123	42 MPH	91 F	Dry
[18:00-18:15]	118	45 MPH	91 F	Dry
[18:15-18:30]	153	44 MPH	91 F	Dry
[18:30-18:45]	134	47 MPH	91 F	Dry
[18:45-19:00]	134	47 MPH	91 F	Dry
[19:00-19:15]	104	47 MPH	91 F	Dry
[19:15-19:30]	106	48 MPH	91 F	Dry
[19:30-19:45]	88	46 MPH	89 F	Dry
[19:45-20:00]	72	46 MPH	89 F	Dry
[20:00-20:15]	91	46 MPH	89 F	Dry
[20:15-20:30]	97	45 MPH	89 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Wed,Jun/30/2010				
[20:30-20:45]	76	48 MPH	87 F	Dry
[20:45-21:00]	72	44 MPH	87 F	Dry
[21:00-21:15]	69	46 MPH	87 F	Dry
[21:15-21:30]	58	40 MPH	82 F	Dry
[21:30-21:45]	54	40 MPH	80 F	Dry
[21:45-22:00]	42	38 MPH	78 F	Dry
[22:00-22:15]	36	43 MPH	78 F	Dry
[22:15-22:30]	18	42 MPH	78 F	Dry
[22:30-22:45]	20	43 MPH	78 F	Dry
[22:45-23:00]	27	43 MPH	80 F	Dry
[23:00-23:15]	17	42 MPH	80 F	Dry
[23:15-23:30]	21	43 MPH	80 F	Dry
[23:30-23:45]	12	42 MPH	80 F	Dry
[23:45-00:00]	12	43 MPH	80 F	Dry
Wed,Jun/30/2010	8679	46 MPH	87 F	
Thu,Jul/01/2010				
[00:00-00:15]	13	43 MPH	80 F	Dry
[00:15-00:30]	10	44 MPH	80 F	Dry
[00:30-00:45]	10	41 MPH	80 F	Dry
[00:45-01:00]	9	38 MPH	80 F	Dry
[01:00-01:15]	6	40 MPH	80 F	Dry
[01:15-01:30]	7	48 MPH	80 F	Dry
[01:30-01:45]	3	47 MPH	80 F	Dry
[01:45-02:00]	5	50 MPH	80 F	Dry
[02:00-02:15]	6	47 MPH	80 F	Dry
[02:15-02:30]	2	48 MPH	80 F	Dry
[02:30-02:45]	6	50 MPH	80 F	Dry
[02:45-03:00]	4	51 MPH	80 F	Dry
[03:00-03:15]	3	47 MPH	80 F	Dry
[03:15-03:30]	2	50 MPH	80 F	Dry
[03:30-03:45]	6	47 MPH	80 F	Dry
[03:45-04:00]	5	48 MPH	80 F	Dry
[04:00-04:15]	4	46 MPH	80 F	Dry
[04:15-04:30]	8	47 MPH	80 F	Dry
[04:30-04:45]	10	50 MPH	80 F	Dry
[04:45-05:00]	16	46 MPH	78 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Thu,Jul/01/2010				
[05:00-05:15]	15	49 MPH	78 F	Dry
[05:15-05:30]	21	49 MPH	78 F	Dry
[05:30-05:45]	32	45 MPH	78 F	Dry
[05:45-06:00]	43	48 MPH	78 F	Dry
[06:00-06:15]	55	46 MPH	78 F	Dry
[06:15-06:30]	82	46 MPH	78 F	Dry
[06:30-06:45]	143	45 MPH	78 F	Dry
[06:45-07:00]	159	44 MPH	78 F	Dry
[07:00-07:15]	236	44 MPH	80 F	Dry
[07:15-07:30]	260	44 MPH	80 F	Dry
[07:30-07:45]	284	44 MPH	80 F	Dry
[07:45-08:00]	293	44 MPH	80 F	Dry
[08:00-08:15]	250	46 MPH	80 F	Dry
[08:15-08:30]	224	45 MPH	80 F	Dry
[08:30-08:45]	197	44 MPH	80 F	Dry
[08:45-09:00]	201	43 MPH	80 F	Dry
[09:00-09:15]	171	42 MPH	80 F	Dry
[09:15-09:30]	138	43 MPH	80 F	Dry
[09:30-09:45]	143	43 MPH	80 F	Dry
[09:45-10:00]	124	45 MPH	80 F	Dry
[10:00-10:15]	136	44 MPH	80 F	Dry
[10:15-10:30]	112	46 MPH	82 F	Dry
[10:30-10:45]	126	45 MPH	82 F	Dry
[10:45-11:00]	145	45 MPH	83 F	Dry
[11:00-11:15]	131	45 MPH	83 F	Dry
[11:15-11:30]	134	45 MPH	85 F	Dry
[11:30-11:45]	135	43 MPH	83 F	Dry
[11:45-12:00]	116	42 MPH	83 F	Dry
[12:00-12:15]	141	42 MPH	83 F	Dry
[12:15-12:30]	124	43 MPH	82 F	Dry
[12:30-12:45]	140	42 MPH	82 F	Dry
[12:45-13:00]	121	41 MPH	82 F	Dry
[13:00-13:15]	105	42 MPH	82 F	Dry
[13:15-13:30]	111	43 MPH	82 F	Dry
[13:30-13:45]	130	44 MPH	82 F	Dry
[13:45-14:00]	102	46 MPH	83 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Tekesta-Thom	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 25849
County: Leon	AADT Factor: 1	AADT Count: 8,616

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Thu,Jul/01/2010				
[14:00-14:15]	104	45 MPH	83 F	Dry
[14:15-14:30]	106	45 MPH	83 F	Dry
[14:30-14:45]	102	46 MPH	85 F	Dry
[14:45-15:00]	116	46 MPH	89 F	Dry
[15:00-15:15]	100	46 MPH	89 F	Dry
[15:15-15:30]	92	47 MPH	91 F	Dry
[15:30-15:45]	108	45 MPH	95 F	Dry
[15:45-16:00]	112	48 MPH	95 F	Dry
[16:00-16:15]	96	48 MPH	93 F	Dry
[16:15-16:30]	110	45 MPH	93 F	Dry
[16:30-16:45]	122	46 MPH	93 F	Dry
[16:45-17:00]	106	48 MPH	93 F	Dry
[17:00-17:15]	125	46 MPH	91 F	Dry
[17:15-17:30]	128	45 MPH	89 F	Dry
[17:30-17:45]	130	40 MPH	87 F	Dry
[17:45-18:00]	134	45 MPH	87 F	Dry
[18:00-18:15]	127	46 MPH	87 F	Dry
[18:15-18:30]	117	42 MPH	87 F	Dry
[18:30-18:45]	109	44 MPH	87 F	Dry
[18:45-19:00]	127	44 MPH	85 F	Dry
[19:00-19:15]	98	45 MPH	85 F	Dry
[19:15-19:30]	92	43 MPH	85 F	Dry
[19:30-19:45]	77	44 MPH	83 F	Dry
[19:45-20:00]	81	47 MPH	83 F	Dry
[20:00-20:15]	69	42 MPH	83 F	Dry
[20:15-20:30]	78	44 MPH	82 F	Dry
[20:30-20:45]	62	43 MPH	82 F	Dry
[20:45-21:00]	55	42 MPH	82 F	Dry
[21:00-21:15]	62	43 MPH	82 F	Dry
[21:15-21:30]	57	47 MPH	80 F	Dry
[21:30-21:45]	59	43 MPH	80 F	Dry
[21:45-22:00]	35	46 MPH	80 F	Dry
[22:00-22:15]	31	45 MPH	80 F	Dry
[22:15-22:30]	33	45 MPH	80 F	Dry
[22:30-22:45]	27	45 MPH	80 F	Dry
[22:45-23:00]	36	45 MPH	80 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3642	Begin: Jun/29/2010 12:00:00 AM		End: Jul/02/2010 12:00:00 AM	
Street: Bannerman Rd	Lane: EB Tekesta-Thom		Hours: 72.00	
State: FL	Oper: TEH		Period: 15	
City: Tallahassee	Posted: 45		Raw Count: 25849	
County: Leon	AADT Factor: 1		AADT Count: 8,616	

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry
Thu,Jul/01/2010				
[23:00-23:15]	24	49 MPH	80 F	Dry
[23:15-23:30]	17	46 MPH	80 F	Dry
[23:30-23:45]	18	44 MPH	80 F	Dry
[23:45-00:00]	20	43 MPH	80 F	Dry
Thu,Jul/01/2010	8517	45 MPH	82 F	
Jun/29/2010 12:00:00 AM Jul/02/2010 12:00:00 AM	25849	46 MPH	87 F	

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[00:00-00:15]	4	51MPH	85 F	Dry		0
[00:15-00:30]	3	35MPH	85 F	Dry		0
[00:30-00:45]	5	50MPH	85 F	Dry		0
[00:45-01:00]	1	52MPH	85 F	Dry		0
[01:00-01:15]	1	58MPH	85 F	Dry		0
[01:15-01:30]	2	48MPH	85 F	Dry		0
[01:30-01:45]	1	48MPH	85 F	Dry		0
[01:45-02:00]	2	55MPH	85 F	Dry		0
[02:00-02:15]	2	48MPH	85 F	Dry		0
[02:15-02:30]	2	53MPH	85 F	Dry		0
[02:30-02:45]	3	51MPH	85 F	Dry		0
[02:45-03:00]	1	58MPH	85 F	Dry		0
[03:00-03:15]	3	56MPH	85 F	Dry		0
[03:15-03:30]	0	0MPH	85 F	Dry		0
[03:30-03:45]	2	50MPH	85 F	Dry		0
[03:45-04:00]	2	50MPH	85 F	Dry		0
[04:00-04:15]	0	0MPH	85 F	Dry		0
[04:15-04:30]	2	50MPH	85 F	Dry		0
[04:30-04:45]	1	38MPH	85 F	Dry		0
[04:45-05:00]	1	0MPH	85 F	Dry		0
[05:00-05:15]	2	60MPH	85 F	Dry		0
[05:15-05:30]	3	49MPH	83 F	Dry		0
[05:30-05:45]	5	48MPH	83 F	Dry		0
[05:45-06:00]	5	53MPH	83 F	Dry		0
[06:00-06:15]	11	49MPH	83 F	Dry		0
[06:15-06:30]	6	46MPH	83 F	Dry		0
[06:30-06:45]	14	50MPH	83 F	Dry		0
[06:45-07:00]	21	48MPH	83 F	Dry		0
[07:00-07:15]	27	50MPH	83 F	Dry		0
[07:15-07:30]	17	53MPH	83 F	Dry		0
[07:30-07:45]	35	47MPH	85 F	Dry		0
[07:45-08:00]	25	46MPH	85 F	Dry		0
[08:00-08:15]	28	47MPH	85 F	Dry		0
[08:15-08:30]	27	47MPH	85 F	Dry		0
[08:30-08:45]	31	51MPH	87 F	Dry		0
[08:45-09:00]	23	51MPH	89 F	Dry		0
[09:00-09:15]	23	48MPH	91 F	Dry		0
[09:15-09:30]	28	50MPH	93 F	Dry		0
[09:30-09:45]	42	48MPH	95 F	Dry		0
[09:45-10:00]	22	48MPH	97 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[10:00-10:15]	18	53MPH	97 F	Dry		0
[10:15-10:30]	29	50MPH	101 F	Dry		0
[10:30-10:45]	24	52MPH	101 F	Dry		0
[10:45-11:00]	17	50MPH	103 F	Dry		0
[11:00-11:15]	18	49MPH	107 F	Dry		0
[11:15-11:30]	32	47MPH	107 F	Dry		0
[11:30-11:45]	32	48MPH	107 F	Dry		0
[11:45-12:00]	27	52MPH	109 F	Dry		0
[12:00-12:15]	26	51MPH	109 F	Dry		0
[12:15-12:30]	25	47MPH	111 F	Dry		0
[12:30-12:45]	49	50MPH	111 F	Dry		0
[12:45-13:00]	24	49MPH	111 F	Dry		5
[13:00-13:15]	38	45MPH	113 F	Dry		0
[13:15-13:30]	31	49MPH	115 F	Dry		0
[13:30-13:45]	25	48MPH	113 F	Dry		0
[13:45-14:00]	23	50MPH	111 F	Dry		0
[14:00-14:15]	29	52MPH	109 F	Dry		0
[14:15-14:30]	31	49MPH	105 F	Dry		0
[14:30-14:45]	29	50MPH	103 F	Dry		0
[14:45-15:00]	25	48MPH	101 F	Dry		0
[15:00-15:15]	29	49MPH	101 F	Dry		0
[15:15-15:30]	45	47MPH	99 F	Dry		0
[15:30-15:45]	32	50MPH	101 F	Dry		0
[15:45-16:00]	43	49MPH	103 F	Dry		0
[16:00-16:15]	22	48MPH	103 F	Dry		0
[16:15-16:30]	38	52MPH	103 F	Dry		0
[16:30-16:45]	34	43MPH	103 F	Dry		0
[16:45-17:00]	53	51MPH	103 F	Dry		0
[17:00-17:15]	69	50MPH	103 F	Dry		1
[17:15-17:30]	68	48MPH	101 F	Dry		1
[17:30-17:45]	70	51MPH	101 F	Dry		1
[17:45-18:00]	72	51MPH	101 F	Dry		1
[18:00-18:15]	87	49MPH	101 F	Dry		1
[18:15-18:30]	53	51MPH	99 F	Dry		0
[18:30-18:45]	43	52MPH	99 F	Dry		0
[18:45-19:00]	40	51MPH	99 F	Dry		0
[19:00-19:15]	46	50MPH	99 F	Dry		0
[19:15-19:30]	38	49MPH	97 F	Dry		0
[19:30-19:45]	39	49MPH	97 F	Dry		0
[19:45-20:00]	36	53MPH	97 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[20:00-20:15]	29	50MPH	97 F	Dry		0
[20:15-20:30]	42	50MPH	95 F	Dry		0
[20:30-20:45]	35	48MPH	95 F	Dry		0
[20:45-21:00]	28	45MPH	95 F	Dry		0
[21:00-21:15]	24	46MPH	93 F	Dry		0
[21:15-21:30]	17	48MPH	93 F	Dry		0
[21:30-21:45]	23	46MPH	93 F	Dry		0
[21:45-22:00]	20	51MPH	91 F	Dry		0
[22:00-22:15]	6	53MPH	91 F	Dry		0
[22:15-22:30]	9	48MPH	91 F	Dry		0
[22:30-22:45]	13	49MPH	91 F	Dry		0
[22:45-23:00]	15	47MPH	91 F	Dry		0
[23:00-23:15]	11	48MPH	89 F	Dry		10
[23:15-23:30]	6	53MPH	89 F	Dry		0
[23:30-23:45]	8	56MPH	89 F	Dry		0
[23:45-00:00]	7	50MPH	89 F	Dry		0
Wed,Jun/30/2010						
[00:00-00:15]	3	41MPH	89 F	Dry		0
[00:15-00:30]	2	58MPH	89 F	Dry		0
[00:30-00:45]	3	56MPH	89 F	Dry		0
[00:45-01:00]	3	50MPH	89 F	Dry		0
[01:00-01:15]	7	53MPH	89 F	Dry		0
[01:15-01:30]	1	48MPH	87 F	Dry		0
[01:30-01:45]	0	0MPH	87 F	Dry		0
[01:45-02:00]	2	47MPH	87 F	Dry		0
[02:00-02:15]	2	52MPH	87 F	Dry		0
[02:15-02:30]	2	60MPH	87 F	Dry		0
[02:30-02:45]	18	51MPH	87 F	Dry		0
[02:45-03:00]	12	46MPH	87 F	Dry		0
[03:00-03:15]	2	48MPH	87 F	Dry		0
[03:15-03:30]	2	47MPH	87 F	Dry		0
[03:30-03:45]	2	53MPH	85 F	Dry		0
[03:45-04:00]	3	56MPH	85 F	Dry		0
[04:00-04:15]	0	0MPH	85 F	Dry		0
[04:15-04:30]	2	43MPH	85 F	Dry		0
[04:30-04:45]	4	58MPH	85 F	Dry		0
[04:45-05:00]	2	52MPH	85 F	Dry		0
[05:00-05:15]	1	0MPH	85 F	Dry		0
[05:15-05:30]	5	50MPH	85 F	Dry		0
[05:30-05:45]	4	44MPH	85 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[05:45-06:00]	9	47MPH	85 F	Dry		0
[06:00-06:15]	9	48MPH	85 F	Dry		0
[06:15-06:30]	11	49MPH	85 F	Dry		0
[06:30-06:45]	19	53MPH	83 F	Dry		0
[06:45-07:00]	16	55MPH	83 F	Dry		0
[07:00-07:15]	26	51MPH	83 F	Dry		0
[07:15-07:30]	21	55MPH	85 F	Dry		0
[07:30-07:45]	20	47MPH	85 F	Dry		0
[07:45-08:00]	27	46MPH	85 F	Dry		0
[08:00-08:15]	22	53MPH	85 F	Dry		6
[08:15-08:30]	22	50MPH	85 F	Dry		0
[08:30-08:45]	24	42MPH	85 F	Dry		0
[08:45-09:00]	30	47MPH	87 F	Dry		0
[09:00-09:15]	16	50MPH	91 F	Dry		0
[09:15-09:30]	29	50MPH	93 F	Dry		0
[09:30-09:45]	28	46MPH	93 F	Dry		0
[09:45-10:00]	16	53MPH	95 F	Dry		0
[10:00-10:15]	27	48MPH	95 F	Dry		0
[10:15-10:30]	22	50MPH	97 F	Dry		0
[10:30-10:45]	25	48MPH	97 F	Dry		0
[10:45-11:00]	26	50MPH	97 F	Dry		0
[11:00-11:15]	37	49MPH	97 F	Dry		0
[11:15-11:30]	23	49MPH	97 F	Dry		0
[11:30-11:45]	31	43MPH	97 F	Dry		0
[11:45-12:00]	28	50MPH	97 F	Dry		0
[12:00-12:15]	30	46MPH	99 F	Dry		0
[12:15-12:30]	39	49MPH	101 F	Dry		0
[12:30-12:45]	27	51MPH	101 F	Dry		0
[12:45-13:00]	35	47MPH	101 F	Dry		0
[13:00-13:15]	37	47MPH	99 F	Dry		0
[13:15-13:30]	28	50MPH	93 F	Dry		0
[13:30-13:45]	35	45MPH	87 F	Dry		0
[13:45-14:00]	28	49MPH	87 F	Dry		0
[14:00-14:15]	21	48MPH	87 F	Dry		0
[14:15-14:30]	40	47MPH	87 F	Dry		0
[14:30-14:45]	20	48MPH	87 F	Dry		0
[14:45-15:00]	31	48MPH	87 F	Dry		0
[15:00-15:15]	36	50MPH	89 F	Dry		0
[15:15-15:30]	26	51MPH	89 F	Dry		0
[15:30-15:45]	31	51MPH	89 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[15:45-16:00]	38	51MPH	91 F	Dry		0
[16:00-16:15]	28	47MPH	91 F	Dry		0
[16:15-16:30]	32	48MPH	93 F	Dry		0
[16:30-16:45]	48	49MPH	93 F	Dry		0
[16:45-17:00]	44	50MPH	93 F	Dry		0
[17:00-17:15]	59	50MPH	93 F	Wet		0
[17:15-17:30]	60	51MPH	93 F	Wet		3
[17:30-17:45]	81	49MPH	93 F	Dry		1
[17:45-18:00]	74	48MPH	95 F	Dry		1
[18:00-18:15]	84	44MPH	97 F	Dry		2
[18:15-18:30]	64	47MPH	97 F	Dry		1
[18:30-18:45]	40	47MPH	97 F	Dry		0
[18:45-19:00]	47	52MPH	97 F	Dry		0
[19:00-19:15]	38	50MPH	95 F	Dry		0
[19:15-19:30]	42	48MPH	95 F	Dry		0
[19:30-19:45]	42	48MPH	93 F	Dry		0
[19:45-20:00]	26	48MPH	91 F	Dry		1
[20:00-20:15]	36	48MPH	91 F	Dry		0
[20:15-20:30]	39	45MPH	91 F	Dry		0
[20:30-20:45]	39	49MPH	89 F	Dry		0
[20:45-21:00]	40	45MPH	89 F	Dry		0
[21:00-21:15]	25	54MPH	89 F	Dry		0
[21:15-21:30]	17	46MPH	89 F	Dry		0
[21:30-21:45]	14	50MPH	89 F	Dry		0
[21:45-22:00]	20	48MPH	87 F	Dry		0
[22:00-22:15]	7	48MPH	83 F	Dry		0
[22:15-22:30]	6	36MPH	80 F	Dry		0
[22:30-22:45]	8	38MPH	80 F	Dry		0
[22:45-23:00]	10	42MPH	80 F	Dry		0
[23:00-23:15]	6	49MPH	82 F	Dry		0
[23:15-23:30]	8	46MPH	82 F	Dry		0
[23:30-23:45]	5	48MPH	80 F	Dry		0
[23:45-00:00]	8	51MPH	82 F	Dry		0
Thu,Jul/01/2010						
[00:00-00:15]	5	49MPH	80 F	Dry		0
[00:15-00:30]	2	53MPH	80 F	Dry		0
[00:30-00:45]	2	43MPH	80 F	Dry		0
[00:45-01:00]	9	48MPH	80 F	Dry		0
[01:00-01:15]	3	47MPH	80 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[01:15-01:30]	5	46MPH	80 F	Dry		0
[01:30-01:45]	3	49MPH	80 F	Dry		0
[01:45-02:00]	0	0MPH	80 F	Dry		0
[02:00-02:15]	3	51MPH	80 F	Dry		0
[02:15-02:30]	8	55MPH	80 F	Dry		0
[02:30-02:45]	2	55MPH	80 F	Dry		0
[02:45-03:00]	4	56MPH	80 F	Dry		0
[03:00-03:15]	1	52MPH	80 F	Dry		0
[03:15-03:30]	3	44MPH	80 F	Dry		0
[03:30-03:45]	0	0MPH	80 F	Dry		0
[03:45-04:00]	2	50MPH	80 F	Dry		0
[04:00-04:15]	1	58MPH	80 F	Dry		0
[04:15-04:30]	3	52MPH	80 F	Dry		0
[04:30-04:45]	2	48MPH	80 F	Dry		0
[04:45-05:00]	3	46MPH	80 F	Dry		0
[05:00-05:15]	0	0MPH	80 F	Dry		0
[05:15-05:30]	2	48MPH	80 F	Dry		0
[05:30-05:45]	2	40MPH	80 F	Dry		0
[05:45-06:00]	6	50MPH	80 F	Dry		0
[06:00-06:15]	9	48MPH	80 F	Dry		0
[06:15-06:30]	15	51MPH	80 F	Dry		0
[06:30-06:45]	15	50MPH	80 F	Dry		0
[06:45-07:00]	21	51MPH	80 F	Dry		0
[07:00-07:15]	25	51MPH	80 F	Dry		0
[07:15-07:30]	25	51MPH	80 F	Dry		0
[07:30-07:45]	19	47MPH	80 F	Dry		0
[07:45-08:00]	28	51MPH	82 F	Dry		0
[08:00-08:15]	19	51MPH	82 F	Dry		0
[08:15-08:30]	25	46MPH	82 F	Dry		0
[08:30-08:45]	28	47MPH	82 F	Dry		0
[08:45-09:00]	35	44MPH	82 F	Dry		0
[09:00-09:15]	25	48MPH	82 F	Dry		0
[09:15-09:30]	15	47MPH	82 F	Dry		0
[09:30-09:45]	23	48MPH	82 F	Dry		0
[09:45-10:00]	25	42MPH	82 F	Dry		0
[10:00-10:15]	25	49MPH	82 F	Dry		0
[10:15-10:30]	19	48MPH	83 F	Dry		0
[10:30-10:45]	28	46MPH	83 F	Dry		0
[10:45-11:00]	20	52MPH	85 F	Dry		0
[11:00-11:15]	20	36MPH	85 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[11:15-11:30]	20	43MPH	87 F	Dry		0
[11:30-11:45]	26	47MPH	89 F	Dry		0
[11:45-12:00]	32	50MPH	91 F	Dry		0
[12:00-12:15]	24	42MPH	89 F	Dry		0
[12:15-12:30]	32	50MPH	87 F	Dry		0
[12:30-12:45]	31	49MPH	87 F	Dry		0
[12:45-13:00]	32	47MPH	85 F	Dry		0
[13:00-13:15]	25	48MPH	85 F	Dry		0
[13:15-13:30]	26	49MPH	83 F	Dry		0
[13:30-13:45]	26	50MPH	83 F	Dry		0
[13:45-14:00]	13	43MPH	85 F	Dry		0
[14:00-14:15]	25	49MPH	85 F	Dry		0
[14:15-14:30]	27	50MPH	87 F	Dry		0
[14:30-14:45]	21	46MPH	87 F	Dry		0
[14:45-15:00]	16	47MPH	89 F	Dry		0
[15:00-15:15]	25	50MPH	89 F	Dry		0
[15:15-15:30]	32	51MPH	93 F	Dry		0
[15:30-15:45]	36	52MPH	93 F	Dry		0
[15:45-16:00]	38	51MPH	93 F	Dry		0
[16:00-16:15]	39	50MPH	91 F	Dry		0
[16:15-16:30]	47	50MPH	89 F	Dry		0
[16:30-16:45]	45	49MPH	87 F	Dry		0
[16:45-17:00]	48	49MPH	87 F	Dry		0
[17:00-17:15]	50	48MPH	87 F	Dry		0
[17:15-17:30]	64	48MPH	87 F	Dry		1
[17:30-17:45]	65	47MPH	87 F	Dry		1
[17:45-18:00]	67	48MPH	89 F	Dry		1
[18:00-18:15]	60	49MPH	87 F	Dry		0
[18:15-18:30]	40	50MPH	85 F	Dry		0
[18:30-18:45]	47	44MPH	83 F	Dry		0
[18:45-19:00]	48	48MPH	83 F	Dry		0
[19:00-19:15]	30	48MPH	83 F	Dry		0
[19:15-19:30]	36	47MPH	83 F	Dry		0
[19:30-19:45]	23	49MPH	82 F	Dry		0
[19:45-20:00]	20	53MPH	82 F	Dry		0
[20:00-20:15]	21	47MPH	80 F	Dry		0
[20:15-20:30]	28	47MPH	80 F	Dry		0
[20:30-20:45]	31	47MPH	80 F	Dry		0
[20:45-21:00]	19	51MPH	80 F	Dry		0
[21:00-21:15]	27	48MPH	80 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Meridian-Bull	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 6512
County: Leon	AADT Factor: 1	AADT Count: 2,171

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[21:15-21:30]	20	53 MPH	80 F	Dry		0
[21:30-21:45]	20	43 MPH	80 F	Dry		0
[21:45-22:00]	12	46 MPH	80 F	Dry		0
[22:00-22:15]	14	47 MPH	80 F	Dry		0
[22:15-22:30]	11	47 MPH	80 F	Dry		0
[22:30-22:45]	15	49 MPH	80 F	Dry		0
[22:45-23:00]	7	45 MPH	80 F	Dry		0
[23:00-23:15]	13	52 MPH	80 F	Dry		0
[23:15-23:30]	8	50 MPH	80 F	Dry		0
[23:30-23:45]	9	53 MPH	80 F	Dry		0
[23:45-00:00]	6	50 MPH	80 F	Dry		0
	6512	49 MPH	89 F			

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[00:00-00:15]	3	51MPH	83 F	Dry		0
[00:15-00:30]	4	49MPH	83 F	Dry		0
[00:30-00:45]	8	49MPH	83 F	Dry		0
[00:45-01:00]	5	48MPH	83 F	Dry		0
[01:00-01:15]	6	48MPH	83 F	Dry		0
[01:15-01:30]	4	37MPH	83 F	Dry		0
[01:30-01:45]	1	38MPH	83 F	Dry		0
[01:45-02:00]	3	52MPH	83 F	Dry		0
[02:00-02:15]	7	47MPH	83 F	Dry		0
[02:15-02:30]	3	53MPH	83 F	Dry		0
[02:30-02:45]	0	0MPH	83 F	Dry		0
[02:45-03:00]	3	53MPH	83 F	Dry		0
[03:00-03:15]	1	68MPH	83 F	Dry		0
[03:15-03:30]	0	0MPH	83 F	Dry		0
[03:30-03:45]	1	48MPH	83 F	Dry		0
[03:45-04:00]	6	49MPH	83 F	Dry		0
[04:00-04:15]	5	53MPH	83 F	Dry		0
[04:15-04:30]	5	56MPH	83 F	Dry		0
[04:30-04:45]	4	54MPH	83 F	Dry		0
[04:45-05:00]	8	55MPH	83 F	Dry		0
[05:00-05:15]	8	56MPH	83 F	Dry		0
[05:15-05:30]	12	56MPH	83 F	Dry		0
[05:30-05:45]	17	48MPH	83 F	Dry		0
[05:45-06:00]	19	48MPH	83 F	Dry		0
[06:00-06:15]	31	50MPH	83 F	Dry		0
[06:15-06:30]	45	48MPH	83 F	Dry		0
[06:30-06:45]	65	48MPH	82 F	Dry		1
[06:45-07:00]	66	46MPH	82 F	Dry		1
[07:00-07:15]	114	46MPH	82 F	Dry		1
[07:15-07:30]	93	47MPH	83 F	Dry		1
[07:30-07:45]	125	44MPH	83 F	Dry		3
[07:45-08:00]	112	46MPH	83 F	Dry		1
[08:00-08:15]	130	45MPH	83 F	Dry		2
[08:15-08:30]	100	47MPH	85 F	Dry		1
[08:30-08:45]	80	48MPH	85 F	Dry		1
[08:45-09:00]	85	48MPH	85 F	Dry		1
[09:00-09:15]	80	49MPH	89 F	Dry		1
[09:15-09:30]	56	49MPH	91 F	Dry		0
[09:30-09:45]	69	48MPH	91 F	Dry		1
[09:45-10:00]	80	50MPH	93 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[10:00-10:15]	41	49MPH	95 F	Dry		0
[10:15-10:30]	74	48MPH	97 F	Dry		1
[10:30-10:45]	56	50MPH	99 F	Dry		0
[10:45-11:00]	62	49MPH	101 F	Dry		1
[11:00-11:15]	52	47MPH	101 F	Dry		0
[11:15-11:30]	86	49MPH	101 F	Dry		1
[11:30-11:45]	72	48MPH	101 F	Dry		1
[11:45-12:00]	60	45MPH	103 F	Dry		1
[12:00-12:15]	62	46MPH	105 F	Dry		1
[12:15-12:30]	73	47MPH	107 F	Dry		1
[12:30-12:45]	76	46MPH	107 F	Dry		1
[12:45-13:00]	67	49MPH	107 F	Dry		1
[13:00-13:15]	81	48MPH	107 F	Dry		1
[13:15-13:30]	78	48MPH	109 F	Dry		1
[13:30-13:45]	46	46MPH	109 F	Dry		5
[13:45-14:00]	57	50MPH	107 F	Dry		1
[14:00-14:15]	64	49MPH	107 F	Dry		1
[14:15-14:30]	60	47MPH	103 F	Dry		0
[14:30-14:45]	69	49MPH	101 F	Dry		1
[14:45-15:00]	62	48MPH	99 F	Dry		0
[15:00-15:15]	50	45MPH	97 F	Dry		0
[15:15-15:30]	67	45MPH	97 F	Dry		1
[15:30-15:45]	68	48MPH	97 F	Dry		1
[15:45-16:00]	57	48MPH	99 F	Dry		0
[16:00-16:15]	51	52MPH	99 F	Dry		0
[16:15-16:30]	64	49MPH	99 F	Dry		1
[16:30-16:45]	61	43MPH	99 F	Dry		1
[16:45-17:00]	71	49MPH	99 F	Dry		1
[17:00-17:15]	74	49MPH	99 F	Dry		1
[17:15-17:30]	70	49MPH	97 F	Dry		1
[17:30-17:45]	80	49MPH	97 F	Dry		1
[17:45-18:00]	78	48MPH	97 F	Dry		1
[18:00-18:15]	85	47MPH	97 F	Dry		1
[18:15-18:30]	72	47MPH	97 F	Dry		1
[18:30-18:45]	50	49MPH	97 F	Dry		0
[18:45-19:00]	66	47MPH	97 F	Dry		1
[19:00-19:15]	60	48MPH	97 F	Dry		0
[19:15-19:30]	61	48MPH	97 F	Dry		0
[19:30-19:45]	51	47MPH	95 F	Dry		0
[19:45-20:00]	56	51MPH	95 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Tue,Jun/29/2010						
[20:00-20:15]	52	45MPH	93 F	Dry		1
[20:15-20:30]	41	47MPH	93 F	Dry		0
[20:30-20:45]	47	48MPH	91 F	Dry		0
[20:45-21:00]	40	46MPH	91 F	Dry		0
[21:00-21:15]	45	47MPH	91 F	Dry		0
[21:15-21:30]	26	47MPH	91 F	Dry		0
[21:30-21:45]	19	48MPH	89 F	Dry		0
[21:45-22:00]	27	46MPH	89 F	Dry		0
[22:00-22:15]	14	49MPH	89 F	Dry		0
[22:15-22:30]	14	46MPH	89 F	Dry		0
[22:30-22:45]	14	49MPH	89 F	Dry		0
[22:45-23:00]	15	49MPH	87 F	Dry		0
[23:00-23:15]	20	50MPH	87 F	Dry		0
[23:15-23:30]	11	49MPH	87 F	Dry		0
[23:30-23:45]	8	50MPH	87 F	Dry		0
[23:45-00:00]	8	47MPH	87 F	Dry		0
Wed,Jun/30/2010						
[00:00-00:15]	5	48MPH	87 F	Dry		0
[00:15-00:30]	4	46MPH	87 F	Dry		0
[00:30-00:45]	7	47MPH	85 F	Dry		0
[00:45-01:00]	7	47MPH	85 F	Dry		0
[01:00-01:15]	6	50MPH	85 F	Dry		0
[01:15-01:30]	4	49MPH	85 F	Dry		0
[01:30-01:45]	0	0MPH	85 F	Dry		0
[01:45-02:00]	2	50MPH	85 F	Dry		0
[02:00-02:15]	5	46MPH	85 F	Dry		0
[02:15-02:30]	3	48MPH	85 F	Dry		0
[02:30-02:45]	7	47MPH	85 F	Dry		0
[02:45-03:00]	13	46MPH	85 F	Dry		0
[03:00-03:15]	5	50MPH	85 F	Dry		0
[03:15-03:30]	6	47MPH	85 F	Dry		0
[03:30-03:45]	4	45MPH	83 F	Dry		0
[03:45-04:00]	4	54MPH	83 F	Dry		0
[04:00-04:15]	2	50MPH	83 F	Dry		0
[04:15-04:30]	4	50MPH	83 F	Dry		0
[04:30-04:45]	8	51MPH	83 F	Dry		0
[04:45-05:00]	12	50MPH	83 F	Dry		0
[05:00-05:15]	3	53MPH	83 F	Dry		0
[05:15-05:30]	21	53MPH	83 F	Dry		0
[05:30-05:45]	11	50MPH	83 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[05:45-06:00]	13	48MPH	83 F	Dry		0
[06:00-06:15]	38	46MPH	83 F	Dry		0
[06:15-06:30]	41	47MPH	83 F	Dry		0
[06:30-06:45]	71	49MPH	83 F	Dry		1
[06:45-07:00]	72	48MPH	83 F	Dry		1
[07:00-07:15]	100	45MPH	83 F	Dry		1
[07:15-07:30]	96	46MPH	83 F	Dry		1
[07:30-07:45]	120	43MPH	83 F	Dry		2
[07:45-08:00]	103	46MPH	83 F	Dry		1
[08:00-08:15]	121	46MPH	83 F	Dry		2
[08:15-08:30]	102	45MPH	83 F	Dry		1
[08:30-08:45]	82	48MPH	83 F	Dry		1
[08:45-09:00]	85	47MPH	83 F	Dry		1
[09:00-09:15]	77	48MPH	85 F	Dry		1
[09:15-09:30]	82	46MPH	87 F	Dry		1
[09:30-09:45]	73	47MPH	89 F	Dry		1
[09:45-10:00]	81	49MPH	89 F	Dry		1
[10:00-10:15]	62	48MPH	91 F	Dry		1
[10:15-10:30]	44	48MPH	93 F	Dry		0
[10:30-10:45]	65	47MPH	95 F	Dry		1
[10:45-11:00]	57	47MPH	95 F	Dry		0
[11:00-11:15]	62	48MPH	95 F	Dry		1
[11:15-11:30]	58	49MPH	95 F	Dry		1
[11:30-11:45]	76	46MPH	95 F	Dry		1
[11:45-12:00]	61	47MPH	97 F	Dry		1
[12:00-12:15]	60	49MPH	97 F	Dry		1
[12:15-12:30]	71	51MPH	99 F	Dry		1
[12:30-12:45]	48	49MPH	99 F	Dry		0
[12:45-13:00]	69	49MPH	97 F	Dry		1
[13:00-13:15]	77	47MPH	97 F	Dry		1
[13:15-13:30]	66	44MPH	93 F	Dry		1
[13:30-13:45]	57	45MPH	91 F	Dry		1
[13:45-14:00]	63	44MPH	85 F	Dry		1
[14:00-14:15]	54	47MPH	85 F	Dry		0
[14:15-14:30]	64	47MPH	85 F	Dry		1
[14:30-14:45]	50	47MPH	85 F	Dry		0
[14:45-15:00]	55	45MPH	85 F	Dry		1
[15:00-15:15]	57	44MPH	85 F	Dry		3
[15:15-15:30]	53	46MPH	85 F	Dry		1
[15:30-15:45]	48	49MPH	87 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Jun/30/2010						
[15:45-16:00]	52	48MPH	89 F	Dry		0
[16:00-16:15]	55	47MPH	89 F	Dry		0
[16:15-16:30]	53	46MPH	91 F	Dry		0
[16:30-16:45]	60	48MPH	91 F	Dry		0
[16:45-17:00]	56	49MPH	91 F	Dry		0
[17:00-17:15]	83	48MPH	91 F	Dry		1
[17:15-17:30]	71	47MPH	91 F	Dry		1
[17:30-17:45]	88	45MPH	91 F	Dry		19
[17:45-18:00]	70	46MPH	91 F	Dry		1
[18:00-18:15]	77	48MPH	93 F	Dry		1
[18:15-18:30]	75	48MPH	95 F	Dry		1
[18:30-18:45]	81	45MPH	95 F	Dry		1
[18:45-19:00]	70	49MPH	93 F	Dry		1
[19:00-19:15]	58	48MPH	93 F	Dry		0
[19:15-19:30]	68	47MPH	91 F	Dry		1
[19:30-19:45]	47	48MPH	91 F	Dry		0
[19:45-20:00]	46	45MPH	89 F	Dry		0
[20:00-20:15]	51	48MPH	89 F	Dry		0
[20:15-20:30]	53	47MPH	89 F	Dry		0
[20:30-20:45]	52	45MPH	87 F	Dry		0
[20:45-21:00]	37	45MPH	87 F	Dry		0
[21:00-21:15]	37	45MPH	87 F	Dry		0
[21:15-21:30]	44	44MPH	85 F	Dry		0
[21:30-21:45]	31	44MPH	85 F	Dry		0
[21:45-22:00]	28	42MPH	82 F	Dry		0
[22:00-22:15]	13	41MPH	80 F	Dry		0
[22:15-22:30]	12	39MPH	80 F	Dry		0
[22:30-22:45]	13	43MPH	80 F	Dry		0
[22:45-23:00]	16	41MPH	80 F	Dry		0
[23:00-23:15]	12	44MPH	80 F	Dry		0
[23:15-23:30]	10	46MPH	80 F	Dry		0
[23:30-23:45]	8	44MPH	80 F	Dry		7
[23:45-00:00]	6	50MPH	80 F	Dry		0
Thu,Jul/01/2010						
[00:00-00:15]	1	38MPH	80 F	Dry		0
[00:15-00:30]	3	39MPH	80 F	Dry		0
[00:30-00:45]	5	44MPH	80 F	Dry		0
[00:45-01:00]	5	48MPH	80 F	Dry		0
[01:00-01:15]	5	46MPH	80 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[01:15-01:30]	4	48MPH	80 F	Dry		0
[01:30-01:45]	3	53MPH	80 F	Dry		0
[01:45-02:00]	2	48MPH	80 F	Dry		0
[02:00-02:15]	4	46MPH	80 F	Dry		0
[02:15-02:30]	4	50MPH	80 F	Dry		0
[02:30-02:45]	6	43MPH	80 F	Dry		0
[02:45-03:00]	2	48MPH	80 F	Dry		0
[03:00-03:15]	2	35MPH	80 F	Dry		0
[03:15-03:30]	3	44MPH	80 F	Dry		0
[03:30-03:45]	1	48MPH	80 F	Dry		0
[03:45-04:00]	3	54MPH	80 F	Dry		0
[04:00-04:15]	1	42MPH	80 F	Dry		0
[04:15-04:30]	4	50MPH	80 F	Dry		0
[04:30-04:45]	8	42MPH	80 F	Dry		0
[04:45-05:00]	7	48MPH	80 F	Dry		0
[05:00-05:15]	10	52MPH	80 F	Dry		0
[05:15-05:30]	4	50MPH	80 F	Dry		0
[05:30-05:45]	9	52MPH	80 F	Dry		0
[05:45-06:00]	20	48MPH	80 F	Dry		0
[06:00-06:15]	28	48MPH	80 F	Dry		0
[06:15-06:30]	40	46MPH	78 F	Dry		6
[06:30-06:45]	65	46MPH	78 F	Dry		1
[06:45-07:00]	66	48MPH	78 F	Dry		1
[07:00-07:15]	102	44MPH	78 F	Dry		1
[07:15-07:30]	93	47MPH	80 F	Dry		1
[07:30-07:45]	110	44MPH	80 F	Dry		1
[07:45-08:00]	120	43MPH	80 F	Dry		2
[08:00-08:15]	99	46MPH	80 F	Dry		1
[08:15-08:30]	93	43MPH	80 F	Dry		1
[08:30-08:45]	77	46MPH	80 F	Dry		1
[08:45-09:00]	106	43MPH	80 F	Dry		1
[09:00-09:15]	85	46MPH	80 F	Dry		1
[09:15-09:30]	78	46MPH	80 F	Dry		1
[09:30-09:45]	66	46MPH	80 F	Dry		1
[09:45-10:00]	64	45MPH	80 F	Dry		1
[10:00-10:15]	54	46MPH	82 F	Dry		0
[10:15-10:30]	54	46MPH	82 F	Dry		0
[10:30-10:45]	67	47MPH	82 F	Dry		1
[10:45-11:00]	74	46MPH	82 F	Dry		1
[11:00-11:15]	56	47MPH	82 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[11:15-11:30]	68	46MPH	83 F	Dry		1
[11:30-11:45]	70	47MPH	85 F	Dry		1
[11:45-12:00]	70	47MPH	85 F	Dry		1
[12:00-12:15]	63	43MPH	80 F	Dry		1
[12:15-12:30]	56	49MPH	82 F	Dry		0
[12:30-12:45]	67	47MPH	82 F	Dry		1
[12:45-13:00]	73	42MPH	80 F	Dry		1
[13:00-13:15]	54	45MPH	82 F	Dry		4
[13:15-13:30]	76	45MPH	82 F	Dry		1
[13:30-13:45]	64	46MPH	82 F	Dry		1
[13:45-14:00]	60	45MPH	82 F	Dry		1
[14:00-14:15]	51	46MPH	82 F	Dry		0
[14:15-14:30]	65	47MPH	83 F	Dry		1
[14:30-14:45]	51	48MPH	83 F	Dry		0
[14:45-15:00]	52	48MPH	85 F	Dry		0
[15:00-15:15]	57	47MPH	87 F	Dry		0
[15:15-15:30]	57	48MPH	89 F	Dry		0
[15:30-15:45]	64	51MPH	95 F	Dry		1
[15:45-16:00]	60	48MPH	91 F	Dry		1
[16:00-16:15]	61	48MPH	91 F	Dry		0
[16:15-16:30]	67	48MPH	91 F	Dry		1
[16:30-16:45]	64	47MPH	91 F	Dry		1
[16:45-17:00]	69	47MPH	91 F	Dry		1
[17:00-17:15]	74	49MPH	93 F	Dry		1
[17:15-17:30]	86	46MPH	91 F	Dry		1
[17:30-17:45]	90	46MPH	91 F	Dry		1
[17:45-18:00]	71	48MPH	91 F	Dry		1
[18:00-18:15]	69	48MPH	91 F	Dry		1
[18:15-18:30]	64	49MPH	89 F	Dry		0
[18:30-18:45]	66	47MPH	87 F	Dry		1
[18:45-19:00]	70	48MPH	85 F	Dry		1
[19:00-19:15]	63	45MPH	85 F	Dry		1
[19:15-19:30]	50	45MPH	83 F	Dry		0
[19:30-19:45]	46	44MPH	82 F	Dry		0
[19:45-20:00]	56	44MPH	82 F	Dry		0
[20:00-20:15]	32	46MPH	82 F	Dry		0
[20:15-20:30]	50	45MPH	82 F	Dry		0
[20:30-20:45]	40	45MPH	82 F	Dry		0
[20:45-21:00]	38	43MPH	82 F	Dry		0
[21:00-21:15]	31	43MPH	82 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Jun/29/2010 12:00:00 AM	End: Jul/02/2010 12:00:00 AM
Street: Bannerman Rd	Lane: EB Bull-Tekesta	Hours: 72.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 45	Raw Count: 13234
County: Leon	AADT Factor: 1	AADT Count: 4,411

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Jul/01/2010						
[21:15-21:30]	38	46 MPH	80 F	Dry		0
[21:30-21:45]	37	45 MPH	80 F	Dry		0
[21:45-22:00]	16	47 MPH	80 F	Dry		0
[22:00-22:15]	17	45 MPH	80 F	Dry		0
[22:15-22:30]	21	45 MPH	80 F	Dry		0
[22:30-22:45]	14	45 MPH	80 F	Dry		0
[22:45-23:00]	24	45 MPH	80 F	Dry		1
[23:00-23:15]	18	46 MPH	80 F	Dry		0
[23:15-23:30]	13	46 MPH	80 F	Dry		0
[23:30-23:45]	15	46 MPH	80 F	Dry		0
[23:45-00:00]	8	46 MPH	80 F	Dry		0
	13234	47 MPH	87 F			

[Raw] Volume Report

HI-Star ID: 4190	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 2	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 15529
County: Leon	AADT Factor: 1	AADT Count: 7,765

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	10	48MPH	42 F	Dry		0
[00:15-00:30]	9	50MPH	42 F	Dry		0
[00:30-00:45]	6	43MPH	41 F	Dry		0
[00:45-01:00]	7	45MPH	41 F	Dry		0
[01:00-01:15]	12	46MPH	39 F	Dry		2
[01:15-01:30]	6	46MPH	39 F	Dry		0
[01:30-01:45]	2	50MPH	39 F	Dry		0
[01:45-02:00]	2	52MPH	39 F	Dry		0
[02:00-02:15]	2	37MPH	39 F	Dry		0
[02:15-02:30]	2	48MPH	39 F	Dry		6
[02:30-02:45]	2	55MPH	39 F	Dry		0
[02:45-03:00]	2	47MPH	39 F	Dry		0
[03:00-03:15]	4	50MPH	39 F	Dry		0
[03:15-03:30]	1	48MPH	39 F	Dry		0
[03:30-03:45]	2	58MPH	39 F	Dry		0
[03:45-04:00]	1	0MPH	37 F	Dry		0
[04:00-04:15]	3	61MPH	37 F	Dry		0
[04:15-04:30]	1	0MPH	37 F	Dry		0
[04:30-04:45]	2	50MPH	37 F	Dry		0
[04:45-05:00]	2	53MPH	37 F	Dry		0
[05:00-05:15]	5	44MPH	37 F	Dry		0
[05:15-05:30]	2	52MPH	37 F	Dry		0
[05:30-05:45]	3	54MPH	37 F	Dry		0
[05:45-06:00]	9	47MPH	37 F	Dry		0
[06:00-06:15]	13	45MPH	37 F	Dry		0
[06:15-06:30]	13	44MPH	37 F	Dry		0
[06:30-06:45]	8	46MPH	35 F	Dry		0
[06:45-07:00]	27	41MPH	35 F	Dry		0
[07:00-07:15]	49	37MPH	35 F	Dry		1
[07:15-07:30]	47	41MPH	35 F	Dry		0
[07:30-07:45]	62	41MPH	35 F	Dry		1
[07:45-08:00]	48	40MPH	37 F	Dry		0
[08:00-08:15]	42	39MPH	37 F	Dry		0
[08:15-08:30]	74	43MPH	39 F	Dry		1
[08:30-08:45]	69	41MPH	41 F	Dry		1
[08:45-09:00]	73	43MPH	42 F	Dry		1
[09:00-09:15]	63	41MPH	44 F	Dry		1
[09:15-09:30]	60	42MPH	46 F	Dry		1
[09:30-09:45]	68	39MPH	48 F	Dry		3
[09:45-10:00]	56	42MPH	48 F	Dry		5

[Raw] Volume Report

HI-Star ID: 4190	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 2	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 15529
County: Leon	AADT Factor: 1	AADT Count: 7,765

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	60	45MPH	48 F	Dry		1
[10:15-10:30]	70	43MPH	50 F	Dry		1
[10:30-10:45]	80	46MPH	50 F	Dry		1
[10:45-11:00]	62	41MPH	52 F	Dry		1
[11:00-11:15]	72	41MPH	56 F	Dry		1
[11:15-11:30]	86	43MPH	56 F	Dry		1
[11:30-11:45]	83	43MPH	56 F	Dry		1
[11:45-12:00]	71	43MPH	56 F	Dry		1
[12:00-12:15]	98	42MPH	56 F	Dry		2
[12:15-12:30]	98	42MPH	54 F	Dry		2
[12:30-12:45]	99	43MPH	54 F	Dry		1
[12:45-13:00]	85	41MPH	52 F	Dry		2
[13:00-13:15]	83	43MPH	52 F	Dry		1
[13:15-13:30]	95	43MPH	52 F	Dry		5
[13:30-13:45]	94	41MPH	52 F	Dry		2
[13:45-14:00]	91	41MPH	52 F	Dry		1
[14:00-14:15]	170	40MPH	52 F	Dry		3
[14:15-14:30]	115	44MPH	52 F	Dry		2
[14:30-14:45]	131	42MPH	52 F	Dry		3
[14:45-15:00]	158	41MPH	52 F	Dry		3
[15:00-15:15]	136	39MPH	52 F	Dry		2
[15:15-15:30]	123	39MPH	52 F	Dry		5
[15:30-15:45]	158	41MPH	52 F	Dry		3
[15:45-16:00]	165	40MPH	52 F	Dry		3
[16:00-16:15]	166	35MPH	50 F	Dry		4
[16:15-16:30]	165	39MPH	50 F	Dry		3
[16:30-16:45]	177	40MPH	50 F	Dry		3
[16:45-17:00]	225	31MPH	50 F	Dry		7
[17:00-17:15]	236	30MPH	50 F	Dry		10
[17:15-17:30]	232	30MPH	50 F	Dry		7
[17:30-17:45]	241	26MPH	50 F	Dry		10
[17:45-18:00]	233	19MPH	50 F	Dry		16
[18:00-18:15]	251	21MPH	50 F	Dry		12
[18:15-18:30]	230	20MPH	50 F	Dry		13
[18:30-18:45]	218	18MPH	50 F	Dry		15
[18:45-19:00]	207	29MPH	50 F	Dry		7
[19:00-19:15]	177	37MPH	48 F	Dry		6
[19:15-19:30]	165	38MPH	48 F	Dry		3
[19:30-19:45]	150	37MPH	48 F	Dry		3
[19:45-20:00]	139	37MPH	48 F	Dry		3

[Raw] Volume Report

HI-Star ID: 4190	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 2	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 15529
County: Leon	AADT Factor: 1	AADT Count: 7,765

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	129	36MPH	48 F	Dry		6
[20:15-20:30]	151	37MPH	48 F	Dry		3
[20:30-20:45]	114	39MPH	46 F	Dry		4
[20:45-21:00]	98	41MPH	46 F	Dry		4
[21:00-21:15]	100	42MPH	46 F	Dry		1
[21:15-21:30]	105	40MPH	46 F	Dry		4
[21:30-21:45]	77	42MPH	46 F	Dry		2
[21:45-22:00]	56	45MPH	44 F	Dry		3
[22:00-22:15]	43	45MPH	44 F	Dry		1
[22:15-22:30]	32	47MPH	44 F	Dry		0
[22:30-22:45]	35	47MPH	44 F	Dry		0
[22:45-23:00]	36	45MPH	42 F	Dry		0
[23:00-23:15]	26	48MPH	42 F	Dry		0
[23:15-23:30]	30	44MPH	42 F	Dry		0
[23:30-23:45]	13	50MPH	42 F	Dry		0
[23:45-00:00]	9	48MPH	42 F	Dry		9
Thu,Dec/09/2010						
[00:00-00:15]	13	45MPH	42 F	Dry		0
[00:15-00:30]	8	49MPH	41 F	Dry		0
[00:30-00:45]	13	48MPH	41 F	Dry		0
[00:45-01:00]	11	46MPH	39 F	Dry		0
[01:00-01:15]	4	48MPH	39 F	Dry		0
[01:15-01:30]	1	48MPH	39 F	Dry		0
[01:30-01:45]	7	52MPH	39 F	Dry		0
[01:45-02:00]	3	43MPH	39 F	Dry		0
[02:00-02:15]	5	44MPH	39 F	Dry		0
[02:15-02:30]	7	47MPH	39 F	Dry		0
[02:30-02:45]	3	40MPH	39 F	Dry		0
[02:45-03:00]	3	60MPH	39 F	Dry		0
[03:00-03:15]	3	49MPH	37 F	Dry		0
[03:15-03:30]	3	39MPH	37 F	Dry		0
[03:30-03:45]	0	0MPH	37 F	Dry		0
[03:45-04:00]	0	0MPH	37 F	Dry		0
[04:00-04:15]	4	47MPH	37 F	Dry		0
[04:15-04:30]	3	59MPH	37 F	Dry		0
[04:30-04:45]	3	39MPH	37 F	Dry		0
[04:45-05:00]	2	63MPH	37 F	Dry		0
[05:00-05:15]	6	54MPH	37 F	Dry		0
[05:15-05:30]	2	55MPH	37 F	Dry		0
[05:30-05:45]	4	46MPH	35 F	Dry		0

[Raw] Volume Report

HI-Star ID: 4190	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 2	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 15529
County: Leon	AADT Factor: 1	AADT Count: 7,765

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	4	49MPH	35 F	Dry		0
[06:00-06:15]	14	42MPH	35 F	Dry		0
[06:15-06:30]	12	45MPH	35 F	Dry		0
[06:30-06:45]	16	45MPH	35 F	Dry		0
[06:45-07:00]	24	42MPH	35 F	Dry		0
[07:00-07:15]	49	42MPH	35 F	Dry		0
[07:15-07:30]	61	40MPH	35 F	Dry		1
[07:30-07:45]	54	39MPH	35 F	Dry		5
[07:45-08:00]	45	41MPH	35 F	Dry		0
[08:00-08:15]	60	38MPH	37 F	Dry		1
[08:15-08:30]	71	41MPH	39 F	Dry		1
[08:30-08:45]	84	44MPH	39 F	Dry		1
[08:45-09:00]	89	43MPH	42 F	Dry		1
[09:00-09:15]	74	42MPH	42 F	Dry		1
[09:15-09:30]	76	40MPH	44 F	Dry		1
[09:30-09:45]	63	43MPH	48 F	Dry		1
[09:45-10:00]	50	45MPH	50 F	Dry		0
[10:00-10:15]	57	45MPH	52 F	Dry		0
[10:15-10:30]	73	43MPH	54 F	Dry		1
[10:30-10:45]	71	42MPH	56 F	Dry		1
[10:45-11:00]	74	42MPH	58 F	Dry		1
[11:00-11:15]	65	42MPH	60 F	Dry		1
[11:15-11:30]	79	42MPH	62 F	Dry		1
[11:30-11:45]	76	44MPH	58 F	Dry		1
[11:45-12:00]	88	44MPH	56 F	Dry		1
[12:00-12:15]	85	44MPH	56 F	Dry		1
[12:15-12:30]	120	42MPH	54 F	Dry		1
[12:30-12:45]	93	40MPH	54 F	Dry		6
[12:45-13:00]	112	43MPH	54 F	Dry		7
[13:00-13:15]	98	44MPH	54 F	Dry		8
[13:15-13:30]	115	41MPH	54 F	Dry		2
[13:30-13:45]	107	42MPH	54 F	Dry		5
[13:45-14:00]	117	42MPH	54 F	Dry		2
[14:00-14:15]	146	39MPH	54 F	Dry		3
[14:15-14:30]	130	41MPH	52 F	Dry		2
[14:30-14:45]	113	40MPH	52 F	Dry		1
[14:45-15:00]	170	39MPH	52 F	Dry		3
[15:00-15:15]	168	36MPH	52 F	Dry		7
[15:15-15:30]	131	39MPH	52 F	Dry		3
[15:30-15:45]	153	40MPH	52 F	Dry		5

[Raw] Volume Report

HI-Star ID: 4190	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 2	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 15529
County: Leon	AADT Factor: 1	AADT Count: 7,765

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	165	41 MPH	52 F	Dry		3
[16:00-16:15]	171	38 MPH	52 F	Dry		8
[16:15-16:30]	181	39 MPH	52 F	Dry		5
[16:30-16:45]	156	39 MPH	52 F	Dry		3
[16:45-17:00]	196	39 MPH	52 F	Dry		5
[17:00-17:15]	236	31 MPH	52 F	Dry		6
[17:15-17:30]	229	33 MPH	52 F	Dry		8
[17:30-17:45]	242	27 MPH	52 F	Dry		8
[17:45-18:00]	233	24 MPH	52 F	Dry		25
[18:00-18:15]	225	29 MPH	52 F	Dry		10
[18:15-18:30]	240	27 MPH	50 F	Dry		8
[18:30-18:45]	206	32 MPH	50 F	Dry		8
[18:45-19:00]	192	35 MPH	50 F	Dry		5
[19:00-19:15]	170	35 MPH	48 F	Dry		5
[19:15-19:30]	180	36 MPH	48 F	Dry		3
[19:30-19:45]	154	39 MPH	48 F	Dry		3
[19:45-20:00]	138	40 MPH	48 F	Dry		17
[20:00-20:15]	119	38 MPH	46 F	Dry		2
[20:15-20:30]	143	39 MPH	46 F	Dry		3
[20:30-20:45]	145	41 MPH	46 F	Dry		2
[20:45-21:00]	96	41 MPH	44 F	Dry		2
[21:00-21:15]	110	41 MPH	44 F	Dry		1
[21:15-21:30]	92	43 MPH	44 F	Dry		1
[21:30-21:45]	89	41 MPH	44 F	Dry		1
[21:45-22:00]	87	42 MPH	44 F	Dry		5
[22:00-22:15]	70	42 MPH	42 F	Dry		1
[22:15-22:30]	54	44 MPH	42 F	Dry		2
[22:30-22:45]	39	43 MPH	42 F	Dry		0
[22:45-23:00]	54	42 MPH	42 F	Dry		0
[23:00-23:15]	38	44 MPH	42 F	Dry		0
[23:15-23:30]	26	43 MPH	42 F	Dry		0
[23:30-23:45]	16	46 MPH	42 F	Dry		7
[23:45-00:00]	24	46 MPH	42 F	Dry		0
	15529	42 MPH	45 F			

[Raw] Volume Report

HI-Star ID: 1967	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 8	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4050
County: Leon	AADT Factor: 1	AADT Count: 2,025

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	3	36MPH	44 F	Dry		0
[00:15-00:30]	1	32MPH	44 F	Dry		0
[00:30-00:45]	1	42MPH	44 F	Dry		0
[00:45-01:00]	0	0MPH	44 F	Dry		0
[01:00-01:15]	0	0MPH	44 F	Dry		0
[01:15-01:30]	1	38MPH	44 F	Dry		0
[01:30-01:45]	0	0MPH	44 F	Dry		0
[01:45-02:00]	0	0MPH	44 F	Dry		0
[02:00-02:15]	1	38MPH	44 F	Dry		0
[02:15-02:30]	1	42MPH	44 F	Dry		0
[02:30-02:45]	1	42MPH	44 F	Dry		0
[02:45-03:00]	1	48MPH	44 F	Dry		0
[03:00-03:15]	1	42MPH	44 F	Dry		0
[03:15-03:30]	1	42MPH	44 F	Dry		0
[03:30-03:45]	2	40MPH	42 F	Dry		0
[03:45-04:00]	0	0MPH	42 F	Dry		0
[04:00-04:15]	1	32MPH	42 F	Dry		0
[04:15-04:30]	1	38MPH	42 F	Dry		0
[04:30-04:45]	1	38MPH	42 F	Dry		0
[04:45-05:00]	3	41MPH	42 F	Dry		0
[05:00-05:15]	1	38MPH	42 F	Dry		0
[05:15-05:30]	2	43MPH	42 F	Dry		0
[05:30-05:45]	9	36MPH	42 F	Dry		0
[05:45-06:00]	8	36MPH	42 F	Dry		0
[06:00-06:15]	10	36MPH	42 F	Dry		0
[06:15-06:30]	21	37MPH	42 F	Dry		0
[06:30-06:45]	20	36MPH	42 F	Dry		0
[06:45-07:00]	33	35MPH	42 F	Dry		0
[07:00-07:15]	55	34MPH	42 F	Dry		1
[07:15-07:30]	74	33MPH	42 F	Dry		1
[07:30-07:45]	107	29MPH	42 F	Dry		3
[07:45-08:00]	83	28MPH	42 F	Dry		2
[08:00-08:15]	72	32MPH	42 F	Dry		2
[08:15-08:30]	59	32MPH	42 F	Dry		1
[08:30-08:45]	38	32MPH	42 F	Dry		1
[08:45-09:00]	48	32MPH	44 F	Dry		1
[09:00-09:15]	41	32MPH	44 F	Dry		1
[09:15-09:30]	31	36MPH	44 F	Dry		0
[09:30-09:45]	27	33MPH	46 F	Dry		0
[09:45-10:00]	18	37MPH	46 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 8	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4050
County: Leon	AADT Factor: 1	AADT Count: 2,025

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	18	37MPH	46 F	Dry		0
[10:15-10:30]	21	37MPH	46 F	Dry		0
[10:30-10:45]	29	35MPH	46 F	Dry		0
[10:45-11:00]	27	35MPH	46 F	Dry		0
[11:00-11:15]	29	34MPH	48 F	Dry		0
[11:15-11:30]	16	34MPH	50 F	Dry		0
[11:30-11:45]	30	34MPH	50 F	Dry		0
[11:45-12:00]	19	35MPH	50 F	Dry		0
[12:00-12:15]	18	34MPH	50 F	Dry		0
[12:15-12:30]	22	37MPH	50 F	Dry		0
[12:30-12:45]	21	32MPH	50 F	Dry		0
[12:45-13:00]	20	36MPH	50 F	Dry		0
[13:00-13:15]	22	36MPH	48 F	Dry		0
[13:15-13:30]	15	34MPH	48 F	Dry		0
[13:30-13:45]	17	35MPH	48 F	Dry		0
[13:45-14:00]	17	36MPH	48 F	Dry		0
[14:00-14:15]	35	35MPH	48 F	Dry		0
[14:15-14:30]	31	33MPH	48 F	Dry		0
[14:30-14:45]	32	35MPH	50 F	Dry		0
[14:45-15:00]	41	33MPH	50 F	Dry		0
[15:00-15:15]	38	35MPH	50 F	Dry		0
[15:15-15:30]	37	33MPH	48 F	Dry		1
[15:30-15:45]	20	36MPH	48 F	Dry		0
[15:45-16:00]	33	34MPH	48 F	Dry		0
[16:00-16:15]	42	34MPH	48 F	Dry		1
[16:15-16:30]	45	34MPH	48 F	Dry		1
[16:30-16:45]	36	32MPH	48 F	Dry		0
[16:45-17:00]	30	31MPH	48 F	Dry		0
[17:00-17:15]	40	35MPH	48 F	Dry		0
[17:15-17:30]	39	32MPH	48 F	Dry		1
[17:30-17:45]	52	34MPH	48 F	Dry		1
[17:45-18:00]	23	36MPH	48 F	Dry		0
[18:00-18:15]	29	32MPH	48 F	Dry		0
[18:15-18:30]	30	33MPH	46 F	Dry		0
[18:30-18:45]	22	33MPH	46 F	Dry		0
[18:45-19:00]	37	33MPH	46 F	Dry		0
[19:00-19:15]	18	36MPH	46 F	Dry		0
[19:15-19:30]	14	33MPH	46 F	Dry		0
[19:30-19:45]	11	37MPH	46 F	Dry		0
[19:45-20:00]	23	34MPH	46 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 8	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4050
County: Leon	AADT Factor: 1	AADT Count: 2,025

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	13	34MPH	46 F	Dry		0
[20:15-20:30]	17	35MPH	46 F	Dry		0
[20:30-20:45]	15	33MPH	46 F	Dry		0
[20:45-21:00]	13	37MPH	46 F	Dry		0
[21:00-21:15]	16	36MPH	46 F	Dry		0
[21:15-21:30]	3	34MPH	44 F	Dry		0
[21:30-21:45]	3	37MPH	44 F	Dry		0
[21:45-22:00]	6	38MPH	44 F	Dry		0
[22:00-22:15]	7	38MPH	44 F	Dry		0
[22:15-22:30]	6	33MPH	44 F	Dry		0
[22:30-22:45]	6	35MPH	44 F	Dry		0
[22:45-23:00]	3	31MPH	44 F	Dry		0
[23:00-23:15]	5	44MPH	44 F	Dry		0
[23:15-23:30]	1	38MPH	44 F	Dry		0
[23:30-23:45]	1	32MPH	44 F	Dry		0
[23:45-00:00]	6	37MPH	44 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	1	38MPH	42 F	Dry		0
[00:15-00:30]	0	0MPH	42 F	Dry		0
[00:30-00:45]	0	0MPH	42 F	Dry		0
[00:45-01:00]	1	38MPH	42 F	Dry		0
[01:00-01:15]	1	42MPH	42 F	Dry		0
[01:15-01:30]	0	0MPH	42 F	Dry		0
[01:30-01:45]	0	0MPH	42 F	Dry		0
[01:45-02:00]	1	38MPH	42 F	Dry		0
[02:00-02:15]	2	35MPH	42 F	Dry		0
[02:15-02:30]	1	42MPH	42 F	Dry		0
[02:30-02:45]	0	0MPH	42 F	Dry		0
[02:45-03:00]	0	0MPH	42 F	Dry		0
[03:00-03:15]	0	0MPH	42 F	Dry		0
[03:15-03:30]	0	0MPH	42 F	Dry		0
[03:30-03:45]	0	0MPH	42 F	Dry		0
[03:45-04:00]	1	18MPH	42 F	Dry		0
[04:00-04:15]	1	28MPH	42 F	Dry		0
[04:15-04:30]	1	42MPH	42 F	Dry		0
[04:30-04:45]	0	0MPH	42 F	Dry		0
[04:45-05:00]	1	32MPH	42 F	Dry		0
[05:00-05:15]	4	34MPH	41 F	Dry		0
[05:15-05:30]	1	42MPH	41 F	Dry		0
[05:30-05:45]	7	37MPH	41 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1967	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 8	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4050
County: Leon	AADT Factor: 1	AADT Count: 2,025

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	5	39MPH	41 F	Dry		0
[06:00-06:15]	7	34MPH	41 F	Dry		0
[06:15-06:30]	10	37MPH	41 F	Dry		0
[06:30-06:45]	28	35MPH	39 F	Dry		0
[06:45-07:00]	30	34MPH	39 F	Dry		0
[07:00-07:15]	52	33MPH	39 F	Dry		1
[07:15-07:30]	78	32MPH	39 F	Dry		3
[07:30-07:45]	107	30MPH	39 F	Dry		4
[07:45-08:00]	76	30MPH	39 F	Dry		4
[08:00-08:15]	67	34MPH	39 F	Dry		1
[08:15-08:30]	62	32MPH	39 F	Dry		1
[08:30-08:45]	58	30MPH	42 F	Dry		1
[08:45-09:00]	56	32MPH	42 F	Dry		1
[09:00-09:15]	41	35MPH	42 F	Dry		1
[09:15-09:30]	33	35MPH	42 F	Dry		0
[09:30-09:45]	32	35MPH	44 F	Dry		0
[09:45-10:00]	18	36MPH	44 F	Dry		0
[10:00-10:15]	15	37MPH	44 F	Dry		0
[10:15-10:30]	20	37MPH	44 F	Dry		0
[10:30-10:45]	16	36MPH	44 F	Dry		0
[10:45-11:00]	12	33MPH	44 F	Dry		0
[11:00-11:15]	24	34MPH	48 F	Dry		0
[11:15-11:30]	23	36MPH	50 F	Dry		0
[11:30-11:45]	21	33MPH	50 F	Dry		0
[11:45-12:00]	23	35MPH	50 F	Dry		0
[12:00-12:15]	19	35MPH	50 F	Dry		0
[12:15-12:30]	35	33MPH	52 F	Dry		0
[12:30-12:45]	17	33MPH	52 F	Dry		0
[12:45-13:00]	14	37MPH	54 F	Dry		0
[13:00-13:15]	16	32MPH	54 F	Dry		0
[13:15-13:30]	19	35MPH	54 F	Dry		0
[13:30-13:45]	20	34MPH	52 F	Dry		0
[13:45-14:00]	24	34MPH	52 F	Dry		0
[14:00-14:15]	36	32MPH	52 F	Dry		0
[14:15-14:30]	26	35MPH	52 F	Dry		0
[14:30-14:45]	37	35MPH	52 F	Dry		4
[14:45-15:00]	34	32MPH	52 F	Dry		0
[15:00-15:15]	41	33MPH	54 F	Dry		1
[15:15-15:30]	28	33MPH	52 F	Dry		0
[15:30-15:45]	43	33MPH	52 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1967	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 8	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4050
County: Leon	AADT Factor: 1	AADT Count: 2,025

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	32	34 MPH	52 F	Dry		0
[16:00-16:15]	46	30 MPH	52 F	Dry		3
[16:15-16:30]	34	35 MPH	52 F	Dry		0
[16:30-16:45]	39	35 MPH	52 F	Dry		0
[16:45-17:00]	43	33 MPH	52 F	Dry		1
[17:00-17:15]	42	32 MPH	52 F	Dry		1
[17:15-17:30]	43	35 MPH	52 F	Dry		1
[17:30-17:45]	41	34 MPH	52 F	Dry		1
[17:45-18:00]	33	35 MPH	50 F	Dry		0
[18:00-18:15]	30	32 MPH	50 F	Dry		0
[18:15-18:30]	25	35 MPH	50 F	Dry		0
[18:30-18:45]	39	33 MPH	50 F	Dry		0
[18:45-19:00]	32	33 MPH	50 F	Dry		0
[19:00-19:15]	28	35 MPH	48 F	Dry		0
[19:15-19:30]	35	35 MPH	48 F	Dry		1
[19:30-19:45]	11	35 MPH	48 F	Dry		0
[19:45-20:00]	15	34 MPH	48 F	Dry		0
[20:00-20:15]	18	33 MPH	48 F	Dry		0
[20:15-20:30]	14	36 MPH	48 F	Dry		0
[20:30-20:45]	18	33 MPH	48 F	Dry		0
[20:45-21:00]	7	31 MPH	48 F	Dry		0
[21:00-21:15]	12	30 MPH	46 F	Dry		0
[21:15-21:30]	8	35 MPH	46 F	Dry		0
[21:30-21:45]	15	36 MPH	46 F	Dry		0
[21:45-22:00]	11	35 MPH	46 F	Dry		0
[22:00-22:15]	8	36 MPH	46 F	Dry		0
[22:15-22:30]	4	41 MPH	46 F	Dry		0
[22:30-22:45]	7	40 MPH	44 F	Dry		0
[22:45-23:00]	2	35 MPH	44 F	Dry		0
[23:00-23:15]	4	39 MPH	44 F	Dry		0
[23:15-23:30]	4	35 MPH	44 F	Dry		0
[23:30-23:45]	4	35 MPH	44 F	Dry		0
[23:45-00:00]	3	39 MPH	44 F	Dry		0
	4050	35 MPH	46 F			

[Raw] Volume Report

HI-Star ID: 2750	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 5	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9547
County: Leon	AADT Factor: 1	AADT Count: 4,774

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	5	40MPH	42 F	Dry		0
[00:15-00:30]	5	43MPH	42 F	Dry		0
[00:30-00:45]	3	43MPH	42 F	Dry		0
[00:45-01:00]	2	50MPH	42 F	Dry		0
[01:00-01:15]	5	41MPH	42 F	Dry		0
[01:15-01:30]	5	42MPH	42 F	Dry		0
[01:30-01:45]	0	0MPH	42 F	Dry		0
[01:45-02:00]	1	38MPH	42 F	Dry		0
[02:00-02:15]	2	43MPH	42 F	Dry		0
[02:15-02:30]	2	45MPH	42 F	Dry		0
[02:30-02:45]	2	45MPH	42 F	Dry		0
[02:45-03:00]	2	45MPH	42 F	Dry		0
[03:00-03:15]	2	50MPH	42 F	Dry		0
[03:15-03:30]	0	0MPH	42 F	Dry		0
[03:30-03:45]	1	58MPH	41 F	Dry		0
[03:45-04:00]	1	38MPH	41 F	Dry		0
[04:00-04:15]	1	38MPH	41 F	Dry		0
[04:15-04:30]	1	0MPH	41 F	Dry		0
[04:30-04:45]	1	48MPH	41 F	Dry		0
[04:45-05:00]	4	44MPH	41 F	Dry		0
[05:00-05:15]	3	31MPH	39 F	Dry		0
[05:15-05:30]	3	46MPH	39 F	Dry		0
[05:30-05:45]	4	43MPH	39 F	Dry		0
[05:45-06:00]	8	40MPH	39 F	Dry		0
[06:00-06:15]	11	40MPH	39 F	Dry		0
[06:15-06:30]	9	36MPH	39 F	Dry		0
[06:30-06:45]	9	38MPH	39 F	Dry		0
[06:45-07:00]	21	39MPH	39 F	Dry		0
[07:00-07:15]	48	35MPH	39 F	Dry		1
[07:15-07:30]	44	40MPH	39 F	Dry		0
[07:30-07:45]	61	39MPH	39 F	Dry		1
[07:45-08:00]	42	42MPH	39 F	Dry		0
[08:00-08:15]	54	39MPH	39 F	Dry		1
[08:15-08:30]	56	40MPH	39 F	Dry		1
[08:30-08:45]	45	38MPH	39 F	Dry		1
[08:45-09:00]	49	40MPH	42 F	Dry		0
[09:00-09:15]	35	40MPH	42 F	Dry		0
[09:15-09:30]	34	41MPH	42 F	Dry		0
[09:30-09:45]	44	39MPH	42 F	Dry		1
[09:45-10:00]	38	39MPH	42 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2750	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 5	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9547
County: Leon	AADT Factor: 1	AADT Count: 4,774

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	37	39MPH	44 F	Dry		0
[10:15-10:30]	46	38MPH	44 F	Dry		0
[10:30-10:45]	46	42MPH	44 F	Dry		0
[10:45-11:00]	47	41MPH	44 F	Dry		0
[11:00-11:15]	42	40MPH	48 F	Dry		0
[11:15-11:30]	44	37MPH	48 F	Dry		0
[11:30-11:45]	58	41MPH	50 F	Dry		1
[11:45-12:00]	48	40MPH	50 F	Dry		0
[12:00-12:15]	59	41MPH	52 F	Dry		1
[12:15-12:30]	65	40MPH	52 F	Dry		1
[12:30-12:45]	58	41MPH	50 F	Dry		1
[12:45-13:00]	47	40MPH	50 F	Dry		0
[13:00-13:15]	57	37MPH	50 F	Dry		1
[13:15-13:30]	61	38MPH	50 F	Dry		1
[13:30-13:45]	60	40MPH	50 F	Dry		1
[13:45-14:00]	56	38MPH	50 F	Dry		1
[14:00-14:15]	123	39MPH	50 F	Dry		2
[14:15-14:30]	79	39MPH	50 F	Dry		1
[14:30-14:45]	82	41MPH	50 F	Dry		1
[14:45-15:00]	110	39MPH	50 F	Dry		2
[15:00-15:15]	105	39MPH	50 F	Dry		1
[15:15-15:30]	91	39MPH	50 F	Dry		1
[15:30-15:45]	91	38MPH	50 F	Dry		1
[15:45-16:00]	95	39MPH	50 F	Dry		1
[16:00-16:15]	96	38MPH	50 F	Dry		1
[16:15-16:30]	117	37MPH	50 F	Dry		2
[16:30-16:45]	94	40MPH	48 F	Dry		1
[16:45-17:00]	111	39MPH	48 F	Dry		16
[17:00-17:15]	145	39MPH	48 F	Dry		3
[17:15-17:30]	120	37MPH	48 F	Dry		16
[17:30-17:45]	142	36MPH	48 F	Dry		3
[17:45-18:00]	124	35MPH	48 F	Dry		3
[18:00-18:15]	148	34MPH	48 F	Dry		3
[18:15-18:30]	124	33MPH	48 F	Dry		2
[18:30-18:45]	110	37MPH	46 F	Dry		2
[18:45-19:00]	118	38MPH	46 F	Dry		2
[19:00-19:15]	96	37MPH	46 F	Dry		1
[19:15-19:30]	89	38MPH	46 F	Dry		1
[19:30-19:45]	95	38MPH	46 F	Dry		1
[19:45-20:00]	74	36MPH	46 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2750	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 5	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9547
County: Leon	AADT Factor: 1	AADT Count: 4,774

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	63	38MPH	46 F	Dry		1
[20:15-20:30]	85	37MPH	46 F	Dry		1
[20:30-20:45]	68	39MPH	44 F	Dry		1
[20:45-21:00]	66	40MPH	44 F	Dry		1
[21:00-21:15]	54	40MPH	44 F	Dry		0
[21:15-21:30]	68	38MPH	44 F	Dry		1
[21:30-21:45]	40	40MPH	44 F	Dry		0
[21:45-22:00]	41	38MPH	44 F	Dry		0
[22:00-22:15]	23	40MPH	44 F	Dry		0
[22:15-22:30]	22	43MPH	44 F	Dry		0
[22:30-22:45]	23	40MPH	42 F	Dry		0
[22:45-23:00]	14	43MPH	42 F	Dry		0
[23:00-23:15]	15	43MPH	42 F	Dry		0
[23:15-23:30]	16	41MPH	42 F	Dry		0
[23:30-23:45]	8	43MPH	42 F	Dry		0
[23:45-00:00]	4	41MPH	42 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	9	43MPH	42 F	Dry		0
[00:15-00:30]	2	47MPH	41 F	Dry		0
[00:30-00:45]	3	43MPH	41 F	Dry		0
[00:45-01:00]	6	38MPH	41 F	Dry		0
[01:00-01:15]	3	34MPH	39 F	Dry		0
[01:15-01:30]	1	42MPH	39 F	Dry		0
[01:30-01:45]	4	46MPH	39 F	Dry		0
[01:45-02:00]	3	42MPH	39 F	Dry		0
[02:00-02:15]	4	42MPH	39 F	Dry		0
[02:15-02:30]	6	43MPH	39 F	Dry		0
[02:30-02:45]	1	48MPH	39 F	Dry		0
[02:45-03:00]	2	45MPH	39 F	Dry		0
[03:00-03:15]	2	52MPH	39 F	Dry		0
[03:15-03:30]	2	38MPH	39 F	Dry		0
[03:30-03:45]	0	0MPH	39 F	Dry		0
[03:45-04:00]	0	0MPH	39 F	Dry		0
[04:00-04:15]	1	0MPH	37 F	Dry		0
[04:15-04:30]	1	58MPH	37 F	Dry		0
[04:30-04:45]	3	41MPH	37 F	Dry		0
[04:45-05:00]	3	46MPH	37 F	Dry		0
[05:00-05:15]	5	45MPH	37 F	Dry		0
[05:15-05:30]	1	42MPH	37 F	Dry		0
[05:30-05:45]	5	42MPH	37 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2750	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 5	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9547
County: Leon	AADT Factor: 1	AADT Count: 4,774

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	6	45MPH	37 F	Dry		0
[06:00-06:15]	5	42MPH	37 F	Dry		0
[06:15-06:30]	11	40MPH	37 F	Dry		0
[06:30-06:45]	14	37MPH	37 F	Dry		0
[06:45-07:00]	17	37MPH	37 F	Dry		0
[07:00-07:15]	38	36MPH	37 F	Dry		0
[07:15-07:30]	48	40MPH	37 F	Dry		0
[07:30-07:45]	67	39MPH	37 F	Dry		1
[07:45-08:00]	46	41MPH	37 F	Dry		0
[08:00-08:15]	64	39MPH	37 F	Dry		1
[08:15-08:30]	50	39MPH	37 F	Dry		0
[08:30-08:45]	54	40MPH	37 F	Dry		1
[08:45-09:00]	57	39MPH	39 F	Dry		1
[09:00-09:15]	58	36MPH	39 F	Dry		1
[09:15-09:30]	43	38MPH	39 F	Dry		0
[09:30-09:45]	43	40MPH	39 F	Dry		1
[09:45-10:00]	37	41MPH	39 F	Dry		0
[10:00-10:15]	33	41MPH	41 F	Dry		0
[10:15-10:30]	41	42MPH	42 F	Dry		0
[10:30-10:45]	50	37MPH	42 F	Dry		1
[10:45-11:00]	40	40MPH	42 F	Dry		0
[11:00-11:15]	50	40MPH	44 F	Dry		1
[11:15-11:30]	55	39MPH	44 F	Dry		1
[11:30-11:45]	46	38MPH	44 F	Dry		1
[11:45-12:00]	60	40MPH	44 F	Dry		1
[12:00-12:15]	60	41MPH	44 F	Dry		1
[12:15-12:30]	68	38MPH	46 F	Dry		1
[12:30-12:45]	54	37MPH	48 F	Dry		1
[12:45-13:00]	65	41MPH	50 F	Dry		5
[13:00-13:15]	57	40MPH	52 F	Dry		1
[13:15-13:30]	69	37MPH	58 F	Dry		1
[13:30-13:45]	55	40MPH	62 F	Dry		1
[13:45-14:00]	58	38MPH	64 F	Dry		1
[14:00-14:15]	112	41MPH	66 F	Dry		2
[14:15-14:30]	84	43MPH	66 F	Dry		1
[14:30-14:45]	77	41MPH	68 F	Dry		1
[14:45-15:00]	85	39MPH	66 F	Dry		1
[15:00-15:15]	137	39MPH	64 F	Dry		3
[15:15-15:30]	94	39MPH	62 F	Dry		1
[15:30-15:45]	103	39MPH	58 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2750	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 5	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9547
County: Leon	AADT Factor: 1	AADT Count: 4,774

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	89	41MPH	58 F	Dry		1
[16:00-16:15]	105	37MPH	56 F	Dry		2
[16:15-16:30]	113	37MPH	56 F	Dry		2
[16:30-16:45]	104	39MPH	54 F	Dry		1
[16:45-17:00]	110	38MPH	54 F	Dry		2
[17:00-17:15]	129	38MPH	52 F	Dry		2
[17:15-17:30]	134	39MPH	52 F	Dry		2
[17:30-17:45]	141	36MPH	52 F	Dry		3
[17:45-18:00]	142	36MPH	52 F	Dry		3
[18:00-18:15]	111	37MPH	52 F	Dry		2
[18:15-18:30]	142	35MPH	50 F	Dry		3
[18:30-18:45]	130	36MPH	50 F	Dry		3
[18:45-19:00]	106	37MPH	50 F	Dry		2
[19:00-19:15]	99	38MPH	50 F	Dry		1
[19:15-19:30]	89	38MPH	50 F	Dry		1
[19:30-19:45]	86	38MPH	48 F	Dry		1
[19:45-20:00]	68	39MPH	48 F	Dry		1
[20:00-20:15]	74	38MPH	48 F	Dry		1
[20:15-20:30]	78	37MPH	48 F	Dry		1
[20:30-20:45]	77	38MPH	48 F	Dry		1
[20:45-21:00]	66	38MPH	46 F	Dry		1
[21:00-21:15]	61	40MPH	46 F	Dry		1
[21:15-21:30]	52	40MPH	46 F	Dry		0
[21:30-21:45]	56	41MPH	46 F	Dry		1
[21:45-22:00]	51	40MPH	44 F	Dry		0
[22:00-22:15]	35	41MPH	44 F	Dry		0
[22:15-22:30]	26	41MPH	44 F	Dry		0
[22:30-22:45]	25	41MPH	44 F	Dry		0
[22:45-23:00]	23	42MPH	44 F	Dry		0
[23:00-23:15]	21	40MPH	44 F	Dry		0
[23:15-23:30]	23	46MPH	44 F	Dry		0
[23:30-23:45]	10	40MPH	44 F	Dry		0
[23:45-00:00]	10	46MPH	44 F	Dry		0
	9547	40 MPH	45 F			

[Raw] Volume Report

HI-Star ID: 3642	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 3	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7716
County: Leon	AADT Factor: 1	AADT Count: 3,858

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	3	28MPH	42 F	Dry		0
[00:15-00:30]	1	32MPH	42 F	Dry		0
[00:30-00:45]	3	33MPH	42 F	Dry		0
[00:45-01:00]	1	32MPH	42 F	Dry		0
[01:00-01:15]	0	0MPH	42 F	Dry		0
[01:15-01:30]	2	33MPH	42 F	Dry		0
[01:30-01:45]	0	0MPH	42 F	Dry		0
[01:45-02:00]	0	0MPH	42 F	Dry		0
[02:00-02:15]	1	42MPH	42 F	Dry		0
[02:15-02:30]	1	32MPH	41 F	Dry		0
[02:30-02:45]	0	0MPH	41 F	Dry		0
[02:45-03:00]	2	37MPH	41 F	Dry		0
[03:00-03:15]	2	35MPH	41 F	Dry		0
[03:15-03:30]	1	22MPH	41 F	Dry		0
[03:30-03:45]	2	35MPH	41 F	Dry		0
[03:45-04:00]	1	32MPH	39 F	Dry		0
[04:00-04:15]	2	35MPH	39 F	Dry		0
[04:15-04:30]	2	30MPH	39 F	Dry		0
[04:30-04:45]	6	37MPH	39 F	Dry		0
[04:45-05:00]	7	32MPH	39 F	Dry		10
[05:00-05:15]	11	30MPH	39 F	Dry		0
[05:15-05:30]	16	32MPH	39 F	Dry		7
[05:30-05:45]	21	34MPH	39 F	Dry		0
[05:45-06:00]	27	32MPH	39 F	Dry		0
[06:00-06:15]	22	31MPH	39 F	Dry		0
[06:15-06:30]	46	28MPH	39 F	Dry		2
[06:30-06:45]	63	30MPH	39 F	Dry		1
[06:45-07:00]	111	28MPH	39 F	Dry		9
[07:00-07:15]	131	25MPH	39 F	Dry		22
[07:15-07:30]	161	23MPH	39 F	Dry		16
[07:30-07:45]	123	27MPH	39 F	Dry		10
[07:45-08:00]	128	27MPH	39 F	Dry		13
[08:00-08:15]	107	28MPH	39 F	Dry		3
[08:15-08:30]	105	29MPH	39 F	Dry		8
[08:30-08:45]	90	29MPH	39 F	Dry		5
[08:45-09:00]	132	25MPH	41 F	Dry		7
[09:00-09:15]	85	29MPH	42 F	Dry		2
[09:15-09:30]	96	27MPH	42 F	Dry		3
[09:30-09:45]	66	31MPH	42 F	Dry		3
[09:45-10:00]	43	31MPH	42 F	Dry		1

[Raw] Volume Report

HI-Star ID: 3642	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 3	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7716
County: Leon	AADT Factor: 1	AADT Count: 3,858

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	54	32MPH	42 F	Dry		3
[10:15-10:30]	46	32MPH	44 F	Dry		1
[10:30-10:45]	49	30MPH	44 F	Dry		1
[10:45-11:00]	39	30MPH	44 F	Dry		8
[11:00-11:15]	47	30MPH	44 F	Dry		1
[11:15-11:30]	49	32MPH	44 F	Dry		1
[11:30-11:45]	41	31MPH	46 F	Dry		3
[11:45-12:00]	45	33MPH	48 F	Dry		1
[12:00-12:15]	57	32MPH	50 F	Dry		1
[12:15-12:30]	43	33MPH	50 F	Dry		1
[12:30-12:45]	37	31MPH	48 F	Dry		1
[12:45-13:00]	50	31MPH	48 F	Dry		1
[13:00-13:15]	47	31MPH	48 F	Dry		1
[13:15-13:30]	53	31MPH	48 F	Dry		1
[13:30-13:45]	49	31MPH	48 F	Dry		1
[13:45-14:00]	44	31MPH	48 F	Dry		1
[14:00-14:15]	43	32MPH	48 F	Dry		2
[14:15-14:30]	28	32MPH	48 F	Dry		0
[14:30-14:45]	48	32MPH	50 F	Dry		2
[14:45-15:00]	47	32MPH	50 F	Dry		3
[15:00-15:15]	43	32MPH	50 F	Dry		5
[15:15-15:30]	55	33MPH	48 F	Dry		1
[15:30-15:45]	51	32MPH	48 F	Dry		1
[15:45-16:00]	39	29MPH	48 F	Dry		4
[16:00-16:15]	97	23MPH	48 F	Dry		10
[16:15-16:30]	58	31MPH	48 F	Dry		1
[16:30-16:45]	58	28MPH	48 F	Dry		2
[16:45-17:00]	58	29MPH	48 F	Dry		1
[17:00-17:15]	67	29MPH	46 F	Dry		2
[17:15-17:30]	58	31MPH	46 F	Dry		4
[17:30-17:45]	69	29MPH	46 F	Dry		1
[17:45-18:00]	59	29MPH	46 F	Dry		1
[18:00-18:15]	45	28MPH	46 F	Dry		6
[18:15-18:30]	56	27MPH	46 F	Dry		1
[18:30-18:45]	51	31MPH	44 F	Dry		1
[18:45-19:00]	49	30MPH	44 F	Dry		1
[19:00-19:15]	41	28MPH	44 F	Dry		1
[19:15-19:30]	29	30MPH	44 F	Dry		0
[19:30-19:45]	30	30MPH	44 F	Dry		0
[19:45-20:00]	50	27MPH	44 F	Dry		1

[Raw] Volume Report

HI-Star ID: 3642	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 3	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7716
County: Leon	AADT Factor: 1	AADT Count: 3,858

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	28	30MPH	44 F	Dry		0
[20:15-20:30]	23	30MPH	44 F	Dry		0
[20:30-20:45]	19	31MPH	44 F	Dry		0
[20:45-21:00]	22	31MPH	44 F	Dry		0
[21:00-21:15]	19	30MPH	44 F	Dry		0
[21:15-21:30]	18	32MPH	44 F	Dry		0
[21:30-21:45]	17	30MPH	44 F	Dry		0
[21:45-22:00]	13	32MPH	42 F	Dry		0
[22:00-22:15]	9	31MPH	42 F	Dry		9
[22:15-22:30]	12	30MPH	42 F	Dry		0
[22:30-22:45]	7	28MPH	42 F	Dry		0
[22:45-23:00]	2	38MPH	42 F	Dry		0
[23:00-23:15]	5	30MPH	42 F	Dry		0
[23:15-23:30]	2	33MPH	42 F	Dry		0
[23:30-23:45]	5	34MPH	42 F	Dry		0
[23:45-00:00]	2	33MPH	41 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	2	20MPH	41 F	Dry		0
[00:15-00:30]	4	29MPH	41 F	Dry		0
[00:30-00:45]	1	32MPH	39 F	Dry		0
[00:45-01:00]	0	0MPH	39 F	Dry		0
[01:00-01:15]	2	23MPH	39 F	Dry		0
[01:15-01:30]	0	0MPH	39 F	Dry		0
[01:30-01:45]	0	0MPH	39 F	Dry		0
[01:45-02:00]	2	37MPH	39 F	Dry		0
[02:00-02:15]	1	38MPH	39 F	Dry		0
[02:15-02:30]	0	0MPH	39 F	Dry		0
[02:30-02:45]	0	0MPH	39 F	Dry		0
[02:45-03:00]	2	23MPH	39 F	Dry		0
[03:00-03:15]	2	33MPH	39 F	Dry		0
[03:15-03:30]	3	32MPH	39 F	Dry		0
[03:30-03:45]	1	28MPH	39 F	Dry		0
[03:45-04:00]	0	0MPH	39 F	Dry		0
[04:00-04:15]	5	30MPH	39 F	Dry		0
[04:15-04:30]	4	35MPH	37 F	Dry		0
[04:30-04:45]	7	35MPH	37 F	Dry		0
[04:45-05:00]	6	34MPH	37 F	Dry		0
[05:00-05:15]	7	33MPH	37 F	Dry		0
[05:15-05:30]	11	32MPH	37 F	Dry		0
[05:30-05:45]	19	31MPH	37 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3642	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 3	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7716
County: Leon	AADT Factor: 1	AADT Count: 3,858

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	17	29MPH	37 F	Dry		0
[06:00-06:15]	13	33MPH	37 F	Dry		2
[06:15-06:30]	61	30MPH	37 F	Dry		1
[06:30-06:45]	72	30MPH	37 F	Dry		2
[06:45-07:00]	86	26MPH	37 F	Dry		3
[07:00-07:15]	121	25MPH	37 F	Dry		13
[07:15-07:30]	150	23MPH	37 F	Dry		17
[07:30-07:45]	146	24MPH	37 F	Dry		10
[07:45-08:00]	110	29MPH	37 F	Dry		10
[08:00-08:15]	123	28MPH	37 F	Dry		9
[08:15-08:30]	107	29MPH	37 F	Dry		14
[08:30-08:45]	100	28MPH	39 F	Dry		5
[08:45-09:00]	107	29MPH	39 F	Dry		4
[09:00-09:15]	119	25MPH	39 F	Dry		8
[09:15-09:30]	99	30MPH	39 F	Dry		7
[09:30-09:45]	62	27MPH	39 F	Dry		1
[09:45-10:00]	49	30MPH	39 F	Dry		1
[10:00-10:15]	40	31MPH	41 F	Dry		7
[10:15-10:30]	51	30MPH	41 F	Dry		1
[10:30-10:45]	44	31MPH	42 F	Dry		7
[10:45-11:00]	47	30MPH	42 F	Dry		5
[11:00-11:15]	49	31MPH	42 F	Dry		1
[11:15-11:30]	40	32MPH	42 F	Dry		0
[11:30-11:45]	59	30MPH	42 F	Dry		3
[11:45-12:00]	51	31MPH	44 F	Dry		1
[12:00-12:15]	57	30MPH	44 F	Dry		1
[12:15-12:30]	52	32MPH	46 F	Dry		1
[12:30-12:45]	35	32MPH	48 F	Dry		1
[12:45-13:00]	40	32MPH	52 F	Dry		12
[13:00-13:15]	44	32MPH	54 F	Dry		1
[13:15-13:30]	42	31MPH	54 F	Dry		1
[13:30-13:45]	45	30MPH	52 F	Dry		1
[13:45-14:00]	49	30MPH	52 F	Dry		1
[14:00-14:15]	50	31MPH	54 F	Dry		1
[14:15-14:30]	43	29MPH	58 F	Dry		6
[14:30-14:45]	56	31MPH	62 F	Dry		1
[14:45-15:00]	37	32MPH	64 F	Dry		0
[15:00-15:15]	61	30MPH	66 F	Dry		2
[15:15-15:30]	50	32MPH	64 F	Dry		5
[15:30-15:45]	35	30MPH	62 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3642	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 3	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7716
County: Leon	AADT Factor: 1	AADT Count: 3,858

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	45	30MPH	58 F	Dry		1
[16:00-16:15]	92	26MPH	56 F	Dry		7
[16:15-16:30]	62	29MPH	54 F	Dry		4
[16:30-16:45]	60	29MPH	54 F	Dry		2
[16:45-17:00]	60	30MPH	52 F	Dry		1
[17:00-17:15]	75	29MPH	52 F	Dry		6
[17:15-17:30]	44	30MPH	52 F	Dry		2
[17:30-17:45]	71	28MPH	52 F	Dry		8
[17:45-18:00]	63	27MPH	50 F	Dry		6
[18:00-18:15]	70	26MPH	50 F	Dry		3
[18:15-18:30]	66	26MPH	50 F	Dry		2
[18:30-18:45]	61	28MPH	48 F	Dry		2
[18:45-19:00]	58	29MPH	48 F	Dry		1
[19:00-19:15]	54	31MPH	48 F	Dry		3
[19:15-19:30]	33	28MPH	48 F	Dry		0
[19:30-19:45]	25	30MPH	46 F	Dry		0
[19:45-20:00]	20	29MPH	46 F	Dry		0
[20:00-20:15]	54	27MPH	46 F	Dry		1
[20:15-20:30]	24	30MPH	44 F	Dry		0
[20:30-20:45]	13	31MPH	44 F	Dry		0
[20:45-21:00]	23	30MPH	44 F	Dry		0
[21:00-21:15]	19	26MPH	44 F	Dry		0
[21:15-21:30]	17	32MPH	44 F	Dry		0
[21:30-21:45]	19	29MPH	44 F	Dry		0
[21:45-22:00]	10	30MPH	44 F	Dry		0
[22:00-22:15]	14	30MPH	42 F	Dry		0
[22:15-22:30]	13	29MPH	42 F	Dry		0
[22:30-22:45]	8	34MPH	42 F	Dry		0
[22:45-23:00]	14	28MPH	42 F	Dry		0
[23:00-23:15]	8	29MPH	42 F	Dry		0
[23:15-23:30]	5	28MPH	42 F	Dry		0
[23:30-23:45]	10	30MPH	42 F	Dry		0
[23:45-00:00]	5	33MPH	42 F	Dry		0
	7716	30 MPH	44 F			

[Raw] Volume Report

HI-Star ID: 4151	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 9	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 2784
County: Leon	AADT Factor: 1	AADT Count: 1,392

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	1	52MPH	41 F	Dry		0
[00:15-00:30]	0	0MPH	39 F	Dry		0
[00:30-00:45]	1	48MPH	39 F	Dry		0
[00:45-01:00]	0	0MPH	39 F	Dry		0
[01:00-01:15]	2	48MPH	39 F	Dry		0
[01:15-01:30]	0	0MPH	39 F	Dry		0
[01:30-01:45]	0	0MPH	39 F	Dry		0
[01:45-02:00]	1	48MPH	39 F	Dry		0
[02:00-02:15]	0	0MPH	39 F	Dry		0
[02:15-02:30]	0	0MPH	39 F	Dry		0
[02:30-02:45]	0	0MPH	39 F	Dry		0
[02:45-03:00]	0	0MPH	39 F	Dry		0
[03:00-03:15]	0	0MPH	39 F	Dry		0
[03:15-03:30]	1	52MPH	39 F	Dry		0
[03:30-03:45]	1	52MPH	37 F	Dry		0
[03:45-04:00]	1	58MPH	37 F	Dry		0
[04:00-04:15]	2	47MPH	37 F	Dry		0
[04:15-04:30]	1	52MPH	37 F	Dry		0
[04:30-04:45]	2	53MPH	37 F	Dry		0
[04:45-05:00]	2	52MPH	37 F	Dry		0
[05:00-05:15]	5	46MPH	37 F	Dry		0
[05:15-05:30]	1	48MPH	37 F	Dry		0
[05:30-05:45]	3	51MPH	37 F	Dry		0
[05:45-06:00]	3	47MPH	35 F	Dry		0
[06:00-06:15]	8	51MPH	35 F	Dry		5
[06:15-06:30]	22	50MPH	35 F	Dry		0
[06:30-06:45]	23	41MPH	35 F	Dry		0
[06:45-07:00]	51	43MPH	35 F	Dry		0
[07:00-07:15]	46	41MPH	35 F	Dry		0
[07:15-07:30]	45	44MPH	35 F	Dry		0
[07:30-07:45]	56	41MPH	35 F	Dry		1
[07:45-08:00]	50	43MPH	35 F	Dry		0
[08:00-08:15]	50	42MPH	35 F	Dry		0
[08:15-08:30]	46	46MPH	35 F	Dry		0
[08:30-08:45]	40	44MPH	35 F	Dry		0
[08:45-09:00]	37	43MPH	37 F	Dry		0
[09:00-09:15]	36	44MPH	37 F	Dry		0
[09:15-09:30]	24	45MPH	39 F	Dry		0
[09:30-09:45]	24	45MPH	39 F	Dry		0
[09:45-10:00]	20	46MPH	41 F	Dry		0

[Raw] Volume Report

HI-Star ID: 4151	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 9	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 2784
County: Leon	AADT Factor: 1	AADT Count: 1,392

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	19	44MPH	42 F	Dry		0
[10:15-10:30]	13	43MPH	42 F	Dry		0
[10:30-10:45]	16	47MPH	42 F	Dry		0
[10:45-11:00]	16	46MPH	44 F	Dry		0
[11:00-11:15]	20	45MPH	44 F	Dry		0
[11:15-11:30]	8	44MPH	46 F	Dry		0
[11:30-11:45]	15	45MPH	48 F	Dry		0
[11:45-12:00]	14	46MPH	50 F	Dry		0
[12:00-12:15]	15	47MPH	50 F	Dry		0
[12:15-12:30]	8	46MPH	50 F	Dry		0
[12:30-12:45]	18	46MPH	48 F	Dry		0
[12:45-13:00]	10	44MPH	48 F	Dry		0
[13:00-13:15]	15	42MPH	48 F	Dry		0
[13:15-13:30]	12	49MPH	48 F	Dry		0
[13:30-13:45]	22	47MPH	48 F	Dry		0
[13:45-14:00]	15	46MPH	48 F	Dry		0
[14:00-14:15]	13	44MPH	48 F	Dry		0
[14:15-14:30]	16	45MPH	48 F	Dry		0
[14:30-14:45]	22	45MPH	48 F	Dry		0
[14:45-15:00]	19	45MPH	48 F	Dry		0
[15:00-15:15]	15	46MPH	48 F	Dry		0
[15:15-15:30]	16	44MPH	48 F	Dry		0
[15:30-15:45]	18	43MPH	48 F	Dry		0
[15:45-16:00]	27	46MPH	48 F	Dry		0
[16:00-16:15]	23	43MPH	46 F	Dry		0
[16:15-16:30]	23	41MPH	46 F	Dry		0
[16:30-16:45]	24	43MPH	46 F	Dry		0
[16:45-17:00]	23	45MPH	46 F	Dry		0
[17:00-17:15]	22	45MPH	44 F	Dry		0
[17:15-17:30]	34	42MPH	44 F	Dry		0
[17:30-17:45]	35	44MPH	44 F	Dry		0
[17:45-18:00]	33	40MPH	44 F	Dry		0
[18:00-18:15]	24	40MPH	44 F	Dry		0
[18:15-18:30]	23	42MPH	44 F	Dry		0
[18:30-18:45]	18	43MPH	44 F	Dry		5
[18:45-19:00]	14	41MPH	44 F	Dry		0
[19:00-19:15]	18	48MPH	44 F	Dry		0
[19:15-19:30]	5	46MPH	44 F	Dry		0
[19:30-19:45]	6	47MPH	42 F	Dry		0
[19:45-20:00]	8	47MPH	42 F	Dry		0

[Raw] Volume Report

HI-Star ID: 4151	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 9	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 2784
County: Leon	AADT Factor: 1	AADT Count: 1,392

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	11	46MPH	42 F	Dry		0
[20:15-20:30]	7	43MPH	42 F	Dry		0
[20:30-20:45]	6	42MPH	42 F	Dry		0
[20:45-21:00]	2	45MPH	42 F	Dry		0
[21:00-21:15]	5	38MPH	42 F	Dry		0
[21:15-21:30]	4	49MPH	42 F	Dry		0
[21:30-21:45]	5	53MPH	42 F	Dry		0
[21:45-22:00]	4	46MPH	42 F	Dry		0
[22:00-22:15]	3	49MPH	42 F	Dry		0
[22:15-22:30]	4	43MPH	42 F	Dry		0
[22:30-22:45]	1	38MPH	42 F	Dry		0
[22:45-23:00]	1	0MPH	42 F	Dry		0
[23:00-23:15]	3	44MPH	41 F	Dry		0
[23:15-23:30]	0	0MPH	41 F	Dry		0
[23:30-23:45]	2	38MPH	39 F	Dry		0
[23:45-00:00]	0	0MPH	39 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	0	0MPH	39 F	Dry		0
[00:15-00:30]	2	45MPH	39 F	Dry		0
[00:30-00:45]	1	42MPH	39 F	Dry		0
[00:45-01:00]	0	0MPH	39 F	Dry		0
[01:00-01:15]	0	0MPH	39 F	Dry		0
[01:15-01:30]	0	0MPH	37 F	Dry		0
[01:30-01:45]	0	0MPH	37 F	Dry		0
[01:45-02:00]	1	0MPH	37 F	Dry		0
[02:00-02:15]	0	0MPH	37 F	Dry		0
[02:15-02:30]	1	32MPH	37 F	Dry		0
[02:30-02:45]	0	0MPH	37 F	Dry		0
[02:45-03:00]	0	0MPH	37 F	Dry		0
[03:00-03:15]	0	0MPH	37 F	Dry		0
[03:15-03:30]	2	55MPH	37 F	Dry		0
[03:30-03:45]	0	0MPH	37 F	Dry		0
[03:45-04:00]	1	52MPH	35 F	Dry		0
[04:00-04:15]	1	48MPH	35 F	Dry		0
[04:15-04:30]	1	0MPH	35 F	Dry		0
[04:30-04:45]	2	53MPH	35 F	Dry		0
[04:45-05:00]	3	50MPH	35 F	Dry		0
[05:00-05:15]	0	0MPH	35 F	Dry		0
[05:15-05:30]	1	48MPH	35 F	Dry		0
[05:30-05:45]	5	52MPH	35 F	Dry		0

[Raw] Volume Report

HI-Star ID: 4151	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 9	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 2784
County: Leon	AADT Factor: 1	AADT Count: 1,392

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	3	49MPH	35 F	Dry		0
[06:00-06:15]	9	44MPH	35 F	Dry		0
[06:15-06:30]	21	47MPH	35 F	Dry		0
[06:30-06:45]	23	45MPH	35 F	Dry		0
[06:45-07:00]	40	43MPH	35 F	Dry		0
[07:00-07:15]	49	46MPH	35 F	Dry		0
[07:15-07:30]	43	42MPH	35 F	Dry		0
[07:30-07:45]	63	42MPH	35 F	Dry		1
[07:45-08:00]	51	42MPH	35 F	Dry		0
[08:00-08:15]	57	42MPH	35 F	Dry		1
[08:15-08:30]	37	42MPH	35 F	Dry		0
[08:30-08:45]	35	43MPH	35 F	Dry		0
[08:45-09:00]	42	43MPH	35 F	Dry		0
[09:00-09:15]	33	44MPH	35 F	Dry		0
[09:15-09:30]	35	45MPH	35 F	Dry		0
[09:30-09:45]	24	43MPH	37 F	Dry		0
[09:45-10:00]	22	44MPH	39 F	Dry		0
[10:00-10:15]	21	44MPH	42 F	Dry		0
[10:15-10:30]	10	44MPH	44 F	Dry		0
[10:30-10:45]	21	47MPH	44 F	Dry		0
[10:45-11:00]	23	44MPH	44 F	Dry		0
[11:00-11:15]	13	42MPH	44 F	Dry		0
[11:15-11:30]	19	46MPH	46 F	Dry		0
[11:30-11:45]	25	49MPH	48 F	Dry		0
[11:45-12:00]	17	46MPH	52 F	Dry		0
[12:00-12:15]	18	47MPH	50 F	Dry		0
[12:15-12:30]	17	42MPH	48 F	Dry		0
[12:30-12:45]	13	43MPH	48 F	Dry		0
[12:45-13:00]	12	43MPH	46 F	Dry		0
[13:00-13:15]	11	42MPH	46 F	Dry		0
[13:15-13:30]	22	43MPH	46 F	Dry		0
[13:30-13:45]	18	45MPH	48 F	Dry		0
[13:45-14:00]	15	46MPH	48 F	Dry		0
[14:00-14:15]	15	44MPH	48 F	Dry		0
[14:15-14:30]	17	44MPH	48 F	Dry		0
[14:30-14:45]	19	41MPH	48 F	Dry		0
[14:45-15:00]	20	46MPH	50 F	Dry		0
[15:00-15:15]	15	45MPH	52 F	Dry		0
[15:15-15:30]	32	44MPH	52 F	Dry		0
[15:30-15:45]	14	42MPH	50 F	Dry		0

[Raw] Volume Report

HI-Star ID: 4151	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 9	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 2784
County: Leon	AADT Factor: 1	AADT Count: 1,392

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	15	45MPH	52 F	Dry		0
[16:00-16:15]	19	42MPH	52 F	Dry		0
[16:15-16:30]	20	44MPH	50 F	Dry		0
[16:30-16:45]	24	44MPH	50 F	Dry		0
[16:45-17:00]	23	41MPH	50 F	Dry		0
[17:00-17:15]	16	47MPH	50 F	Dry		0
[17:15-17:30]	28	43MPH	48 F	Dry		0
[17:30-17:45]	35	41MPH	48 F	Dry		0
[17:45-18:00]	22	41MPH	46 F	Dry		0
[18:00-18:15]	18	41MPH	46 F	Dry		0
[18:15-18:30]	25	39MPH	44 F	Dry		0
[18:30-18:45]	21	39MPH	44 F	Dry		0
[18:45-19:00]	23	43MPH	44 F	Dry		0
[19:00-19:15]	6	46MPH	44 F	Dry		0
[19:15-19:30]	14	44MPH	44 F	Dry		0
[19:30-19:45]	6	44MPH	42 F	Dry		0
[19:45-20:00]	10	45MPH	42 F	Dry		0
[20:00-20:15]	10	42MPH	42 F	Dry		0
[20:15-20:30]	5	40MPH	42 F	Dry		0
[20:30-20:45]	5	44MPH	42 F	Dry		0
[20:45-21:00]	6	46MPH	42 F	Dry		0
[21:00-21:15]	6	44MPH	42 F	Dry		0
[21:15-21:30]	6	51MPH	42 F	Dry		0
[21:30-21:45]	7	44MPH	42 F	Dry		0
[21:45-22:00]	6	43MPH	42 F	Dry		0
[22:00-22:15]	4	43MPH	41 F	Dry		0
[22:15-22:30]	2	50MPH	41 F	Dry		0
[22:30-22:45]	3	43MPH	41 F	Dry		0
[22:45-23:00]	5	45MPH	39 F	Dry		0
[23:00-23:15]	0	0MPH	39 F	Dry		0
[23:15-23:30]	0	0MPH	39 F	Dry		0
[23:30-23:45]	0	0MPH	39 F	Dry		0
[23:45-00:00]	1	43MPH	39 F	Dry		0
	2784	44 MPH	42 F			

[Raw] Volume Report

HI-Star ID: 3640	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 6	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 6203
County: Leon	AADT Factor: 1	AADT Count: 3,102

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	3	34MPH	41 F	Dry		0
[00:15-00:30]	1	32MPH	41 F	Dry		0
[00:30-00:45]	1	32MPH	41 F	Dry		0
[00:45-01:00]	0	0MPH	39 F	Dry		0
[01:00-01:15]	2	30MPH	39 F	Dry		0
[01:15-01:30]	1	38MPH	39 F	Dry		0
[01:30-01:45]	2	35MPH	39 F	Dry		0
[01:45-02:00]	1	42MPH	39 F	Dry		0
[02:00-02:15]	0	0MPH	39 F	Dry		0
[02:15-02:30]	1	38MPH	39 F	Dry		0
[02:30-02:45]	1	12MPH	39 F	Dry		0
[02:45-03:00]	1	38MPH	39 F	Dry		0
[03:00-03:15]	2	25MPH	39 F	Dry		0
[03:15-03:30]	2	38MPH	39 F	Dry		9
[03:30-03:45]	0	0MPH	39 F	Dry		0
[03:45-04:00]	2	30MPH	37 F	Dry		0
[04:00-04:15]	4	28MPH	37 F	Dry		0
[04:15-04:30]	2	33MPH	37 F	Dry		0
[04:30-04:45]	2	28MPH	37 F	Dry		0
[04:45-05:00]	3	27MPH	37 F	Dry		0
[05:00-05:15]	8	36MPH	37 F	Dry		0
[05:15-05:30]	10	41MPH	37 F	Dry		0
[05:30-05:45]	11	32MPH	37 F	Dry		0
[05:45-06:00]	15	31MPH	37 F	Dry		0
[06:00-06:15]	21	30MPH	37 F	Dry		0
[06:15-06:30]	44	30MPH	37 F	Dry		1
[06:30-06:45]	57	27MPH	37 F	Dry		1
[06:45-07:00]	82	27MPH	37 F	Dry		2
[07:00-07:15]	111	25MPH	37 F	Dry		4
[07:15-07:30]	128	25MPH	37 F	Dry		6
[07:30-07:45]	130	26MPH	37 F	Dry		5
[07:45-08:00]	102	26MPH	37 F	Dry		3
[08:00-08:15]	126	26MPH	37 F	Dry		5
[08:15-08:30]	76	27MPH	37 F	Dry		2
[08:30-08:45]	76	26MPH	39 F	Dry		2
[08:45-09:00]	78	27MPH	39 F	Dry		2
[09:00-09:15]	75	28MPH	41 F	Dry		2
[09:15-09:30]	79	30MPH	42 F	Dry		2
[09:30-09:45]	32	31MPH	44 F	Dry		0
[09:45-10:00]	30	28MPH	44 F	Dry		1

[Raw] Volume Report

HI-Star ID: 3640	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 6	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 6203
County: Leon	AADT Factor: 1	AADT Count: 3,102

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	26	30MPH	46 F	Dry		0
[10:15-10:30]	35	30MPH	48 F	Dry		1
[10:30-10:45]	33	28MPH	48 F	Dry		1
[10:45-11:00]	30	30MPH	50 F	Dry		0
[11:00-11:15]	43	27MPH	48 F	Dry		1
[11:15-11:30]	27	32MPH	52 F	Dry		0
[11:30-11:45]	37	30MPH	52 F	Dry		0
[11:45-12:00]	31	31MPH	56 F	Dry		0
[12:00-12:15]	41	33MPH	56 F	Dry		1
[12:15-12:30]	25	34MPH	56 F	Dry		0
[12:30-12:45]	30	31MPH	54 F	Dry		0
[12:45-13:00]	28	29MPH	52 F	Dry		0
[13:00-13:15]	39	29MPH	52 F	Dry		1
[13:15-13:30]	26	32MPH	52 F	Dry		0
[13:30-13:45]	27	32MPH	52 F	Dry		0
[13:45-14:00]	30	31MPH	52 F	Dry		1
[14:00-14:15]	25	31MPH	52 F	Dry		0
[14:15-14:30]	40	30MPH	52 F	Dry		8
[14:30-14:45]	51	31MPH	52 F	Dry		1
[14:45-15:00]	34	31MPH	52 F	Dry		0
[15:00-15:15]	49	29MPH	52 F	Dry		2
[15:15-15:30]	21	29MPH	52 F	Dry		0
[15:30-15:45]	35	30MPH	52 F	Dry		1
[15:45-16:00]	48	29MPH	52 F	Dry		1
[16:00-16:15]	105	24MPH	50 F	Dry		5
[16:15-16:30]	47	30MPH	50 F	Dry		1
[16:30-16:45]	47	28MPH	50 F	Dry		1
[16:45-17:00]	42	29MPH	50 F	Dry		3
[17:00-17:15]	47	28MPH	48 F	Dry		4
[17:15-17:30]	48	28MPH	48 F	Dry		1
[17:30-17:45]	50	27MPH	48 F	Dry		1
[17:45-18:00]	38	28MPH	48 F	Dry		1
[18:00-18:15]	46	24MPH	48 F	Dry		1
[18:15-18:30]	41	29MPH	48 F	Dry		1
[18:30-18:45]	45	27MPH	46 F	Dry		1
[18:45-19:00]	46	30MPH	46 F	Dry		1
[19:00-19:15]	32	30MPH	46 F	Dry		0
[19:15-19:30]	43	27MPH	46 F	Dry		1
[19:30-19:45]	31	26MPH	46 F	Dry		0
[19:45-20:00]	62	27MPH	46 F	Dry		1

[Raw] Volume Report

HI-Star ID: 3640	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 6	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 6203
County: Leon	AADT Factor: 1	AADT Count: 3,102

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	23	26MPH	46 F	Dry		0
[20:15-20:30]	23	28MPH	44 F	Dry		0
[20:30-20:45]	16	27MPH	44 F	Dry		0
[20:45-21:00]	11	29MPH	44 F	Dry		0
[21:00-21:15]	10	29MPH	44 F	Dry		0
[21:15-21:30]	9	25MPH	44 F	Dry		0
[21:30-21:45]	7	22MPH	44 F	Dry		0
[21:45-22:00]	8	28MPH	44 F	Dry		0
[22:00-22:15]	7	33MPH	44 F	Dry		0
[22:15-22:30]	7	31MPH	44 F	Dry		0
[22:30-22:45]	5	34MPH	42 F	Dry		0
[22:45-23:00]	3	31MPH	42 F	Dry		0
[23:00-23:15]	4	29MPH	42 F	Dry		0
[23:15-23:30]	3	34MPH	42 F	Dry		0
[23:30-23:45]	1	32MPH	41 F	Dry		0
[23:45-00:00]	3	33MPH	41 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	1	42MPH	39 F	Dry		0
[00:15-00:30]	0	0MPH	39 F	Dry		0
[00:30-00:45]	2	40MPH	39 F	Dry		0
[00:45-01:00]	2	33MPH	39 F	Dry		0
[01:00-01:15]	1	28MPH	39 F	Dry		0
[01:15-01:30]	0	0MPH	39 F	Dry		0
[01:30-01:45]	1	32MPH	39 F	Dry		0
[01:45-02:00]	2	30MPH	39 F	Dry		0
[02:00-02:15]	2	28MPH	37 F	Dry		0
[02:15-02:30]	1	28MPH	37 F	Dry		0
[02:30-02:45]	1	12MPH	37 F	Dry		0
[02:45-03:00]	2	18MPH	37 F	Dry		0
[03:00-03:15]	0	0MPH	37 F	Dry		0
[03:15-03:30]	1	42MPH	37 F	Dry		0
[03:30-03:45]	0	0MPH	37 F	Dry		0
[03:45-04:00]	2	27MPH	37 F	Dry		0
[04:00-04:15]	4	32MPH	35 F	Dry		0
[04:15-04:30]	2	28MPH	35 F	Dry		0
[04:30-04:45]	2	40MPH	35 F	Dry		0
[04:45-05:00]	5	26MPH	35 F	Dry		0
[05:00-05:15]	8	29MPH	35 F	Dry		0
[05:15-05:30]	6	30MPH	35 F	Dry		0
[05:30-05:45]	8	34MPH	35 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3640	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 6	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 6203
County: Leon	AADT Factor: 1	AADT Count: 3,102

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	14	30MPH	35 F	Dry		0
[06:00-06:15]	26	30MPH	35 F	Dry		0
[06:15-06:30]	46	26MPH	35 F	Dry		1
[06:30-06:45]	73	27MPH	35 F	Dry		2
[06:45-07:00]	82	27MPH	35 F	Dry		2
[07:00-07:15]	115	25MPH	35 F	Dry		4
[07:15-07:30]	117	26MPH	35 F	Dry		4
[07:30-07:45]	129	25MPH	35 F	Dry		5
[07:45-08:00]	98	27MPH	35 F	Dry		3
[08:00-08:15]	110	25MPH	35 F	Dry		5
[08:15-08:30]	103	28MPH	35 F	Dry		3
[08:30-08:45]	90	26MPH	37 F	Dry		3
[08:45-09:00]	86	29MPH	39 F	Dry		2
[09:00-09:15]	62	29MPH	39 F	Dry		1
[09:15-09:30]	87	27MPH	39 F	Dry		2
[09:30-09:45]	58	28MPH	42 F	Dry		1
[09:45-10:00]	29	29MPH	44 F	Dry		0
[10:00-10:15]	29	28MPH	44 F	Dry		0
[10:15-10:30]	37	31MPH	48 F	Dry		0
[10:30-10:45]	29	29MPH	50 F	Dry		0
[10:45-11:00]	33	31MPH	50 F	Dry		0
[11:00-11:15]	31	30MPH	50 F	Dry		0
[11:15-11:30]	50	30MPH	52 F	Dry		1
[11:30-11:45]	31	31MPH	56 F	Dry		0
[11:45-12:00]	39	32MPH	58 F	Dry		0
[12:00-12:15]	23	29MPH	62 F	Dry		0
[12:15-12:30]	28	32MPH	64 F	Dry		0
[12:30-12:45]	43	31MPH	66 F	Dry		1
[12:45-13:00]	42	30MPH	66 F	Dry		1
[13:00-13:15]	32	30MPH	68 F	Dry		0
[13:15-13:30]	28	29MPH	70 F	Dry		0
[13:30-13:45]	36	30MPH	70 F	Dry		6
[13:45-14:00]	37	32MPH	70 F	Dry		0
[14:00-14:15]	26	31MPH	68 F	Dry		0
[14:15-14:30]	48	28MPH	64 F	Dry		1
[14:30-14:45]	47	30MPH	60 F	Dry		1
[14:45-15:00]	32	30MPH	60 F	Dry		0
[15:00-15:15]	34	29MPH	58 F	Dry		0
[15:15-15:30]	40	27MPH	56 F	Dry		1
[15:30-15:45]	43	30MPH	56 F	Dry		1

[Raw] Volume Report

HI-Star ID: 3640	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 6	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 6203
County: Leon	AADT Factor: 1	AADT Count: 3,102

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	44	28MPH	54 F	Dry		1
[16:00-16:15]	104	23MPH	54 F	Dry		5
[16:15-16:30]	42	29MPH	54 F	Dry		3
[16:30-16:45]	47	29MPH	52 F	Dry		1
[16:45-17:00]	44	29MPH	52 F	Dry		1
[17:00-17:15]	55	31MPH	52 F	Dry		1
[17:15-17:30]	41	28MPH	52 F	Dry		0
[17:30-17:45]	49	28MPH	50 F	Dry		1
[17:45-18:00]	31	31MPH	50 F	Dry		0
[18:00-18:15]	44	25MPH	50 F	Dry		1
[18:15-18:30]	50	28MPH	48 F	Dry		1
[18:30-18:45]	47	26MPH	48 F	Dry		1
[18:45-19:00]	35	29MPH	48 F	Dry		0
[19:00-19:15]	37	27MPH	46 F	Dry		1
[19:15-19:30]	26	28MPH	46 F	Dry		0
[19:30-19:45]	38	30MPH	46 F	Dry		1
[19:45-20:00]	15	29MPH	44 F	Dry		0
[20:00-20:15]	55	26MPH	44 F	Dry		1
[20:15-20:30]	13	27MPH	44 F	Dry		0
[20:30-20:45]	26	30MPH	44 F	Dry		0
[20:45-21:00]	14	33MPH	44 F	Dry		0
[21:00-21:15]	13	29MPH	42 F	Dry		0
[21:15-21:30]	20	31MPH	42 F	Dry		0
[21:30-21:45]	7	32MPH	42 F	Dry		0
[21:45-22:00]	14	32MPH	42 F	Dry		0
[22:00-22:15]	13	31MPH	42 F	Dry		0
[22:15-22:30]	6	28MPH	42 F	Dry		0
[22:30-22:45]	8	29MPH	42 F	Dry		0
[22:45-23:00]	4	34MPH	42 F	Dry		0
[23:00-23:15]	6	34MPH	42 F	Dry		0
[23:15-23:30]	6	30MPH	41 F	Dry		0
[23:30-23:45]	4	29MPH	41 F	Dry		0
[23:45-00:00]	6	31MPH	41 F	Dry		0
	6203	29 MPH	45 F			

[Raw] Volume Report

HI-Star ID: 3644	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 10	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4545
County: Leon	AADT Factor: 1	AADT Count: 2,273

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	1	52MPH	44 F	Dry		0
[00:15-00:30]	4	38MPH	44 F	Dry		0
[00:30-00:45]	7	46MPH	42 F	Dry		0
[00:45-01:00]	4	50MPH	42 F	Dry		0
[01:00-01:15]	4	44MPH	42 F	Dry		0
[01:15-01:30]	1	52MPH	42 F	Dry		0
[01:30-01:45]	0	0MPH	42 F	Dry		0
[01:45-02:00]	0	0MPH	42 F	Dry		0
[02:00-02:15]	2	43MPH	42 F	Dry		0
[02:15-02:30]	0	0MPH	42 F	Dry		0
[02:30-02:45]	1	42MPH	42 F	Dry		0
[02:45-03:00]	2	43MPH	42 F	Dry		0
[03:00-03:15]	1	38MPH	42 F	Dry		0
[03:15-03:30]	1	38MPH	42 F	Dry		0
[03:30-03:45]	1	48MPH	42 F	Dry		0
[03:45-04:00]	2	43MPH	42 F	Dry		0
[04:00-04:15]	1	52MPH	42 F	Dry		0
[04:15-04:30]	1	42MPH	42 F	Dry		0
[04:30-04:45]	0	0MPH	42 F	Dry		0
[04:45-05:00]	1	42MPH	42 F	Dry		0
[05:00-05:15]	0	0MPH	42 F	Dry		0
[05:15-05:30]	0	0MPH	41 F	Dry		0
[05:30-05:45]	2	50MPH	41 F	Dry		0
[05:45-06:00]	3	41MPH	41 F	Dry		0
[06:00-06:15]	4	35MPH	41 F	Dry		0
[06:15-06:30]	5	38MPH	39 F	Dry		0
[06:30-06:45]	3	46MPH	39 F	Dry		0
[06:45-07:00]	5	46MPH	39 F	Dry		0
[07:00-07:15]	16	44MPH	39 F	Dry		0
[07:15-07:30]	13	43MPH	39 F	Dry		0
[07:30-07:45]	14	41MPH	39 F	Dry		0
[07:45-08:00]	14	38MPH	39 F	Dry		0
[08:00-08:15]	30	40MPH	39 F	Dry		0
[08:15-08:30]	33	41MPH	39 F	Dry		0
[08:30-08:45]	36	40MPH	39 F	Dry		0
[08:45-09:00]	29	41MPH	39 F	Dry		0
[09:00-09:15]	22	43MPH	41 F	Dry		0
[09:15-09:30]	32	35MPH	42 F	Dry		1
[09:30-09:45]	11	45MPH	42 F	Dry		0
[09:45-10:00]	18	42MPH	42 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 10	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4545
County: Leon	AADT Factor: 1	AADT Count: 2,273

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	12	43MPH	42 F	Dry		0
[10:15-10:30]	18	44MPH	44 F	Dry		0
[10:30-10:45]	18	43MPH	44 F	Dry		0
[10:45-11:00]	18	38MPH	46 F	Dry		7
[11:00-11:15]	15	42MPH	46 F	Dry		0
[11:15-11:30]	14	44MPH	46 F	Dry		0
[11:30-11:45]	17	42MPH	48 F	Dry		0
[11:45-12:00]	18	47MPH	48 F	Dry		0
[12:00-12:15]	23	41MPH	50 F	Dry		0
[12:15-12:30]	29	42MPH	50 F	Dry		0
[12:30-12:45]	31	42MPH	48 F	Dry		0
[12:45-13:00]	32	41MPH	48 F	Dry		0
[13:00-13:15]	24	42MPH	48 F	Dry		0
[13:15-13:30]	26	42MPH	48 F	Dry		0
[13:30-13:45]	17	41MPH	48 F	Dry		0
[13:45-14:00]	20	43MPH	48 F	Dry		0
[14:00-14:15]	21	40MPH	48 F	Dry		0
[14:15-14:30]	38	42MPH	48 F	Dry		0
[14:30-14:45]	28	41MPH	48 F	Dry		0
[14:45-15:00]	34	42MPH	48 F	Dry		0
[15:00-15:15]	69	38MPH	48 F	Dry		1
[15:15-15:30]	54	42MPH	48 F	Dry		0
[15:30-15:45]	58	41MPH	48 F	Dry		1
[15:45-16:00]	54	40MPH	48 F	Dry		0
[16:00-16:15]	54	40MPH	48 F	Dry		1
[16:15-16:30]	60	41MPH	48 F	Dry		1
[16:30-16:45]	63	40MPH	48 F	Dry		1
[16:45-17:00]	63	40MPH	48 F	Dry		1
[17:00-17:15]	68	40MPH	46 F	Dry		1
[17:15-17:30]	107	38MPH	46 F	Dry		1
[17:30-17:45]	97	37MPH	46 F	Dry		1
[17:45-18:00]	104	37MPH	46 F	Dry		2
[18:00-18:15]	90	37MPH	46 F	Dry		1
[18:15-18:30]	52	40MPH	46 F	Dry		0
[18:30-18:45]	70	39MPH	46 F	Dry		1
[18:45-19:00]	55	39MPH	46 F	Dry		0
[19:00-19:15]	49	39MPH	44 F	Dry		0
[19:15-19:30]	28	41MPH	44 F	Dry		0
[19:30-19:45]	25	44MPH	44 F	Dry		0
[19:45-20:00]	25	42MPH	44 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 10	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4545
County: Leon	AADT Factor: 1	AADT Count: 2,273

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	30	42MPH	44 F	Dry		0
[20:15-20:30]	29	40MPH	44 F	Dry		0
[20:30-20:45]	35	44MPH	44 F	Dry		0
[20:45-21:00]	22	43MPH	44 F	Dry		0
[21:00-21:15]	17	41MPH	44 F	Dry		0
[21:15-21:30]	21	46MPH	44 F	Dry		0
[21:30-21:45]	15	43MPH	44 F	Dry		0
[21:45-22:00]	12	43MPH	44 F	Dry		0
[22:00-22:15]	15	43MPH	44 F	Dry		0
[22:15-22:30]	9	43MPH	44 F	Dry		0
[22:30-22:45]	10	42MPH	44 F	Dry		0
[22:45-23:00]	6	45MPH	42 F	Dry		0
[23:00-23:15]	4	51MPH	42 F	Dry		0
[23:15-23:30]	7	43MPH	42 F	Dry		0
[23:30-23:45]	8	40MPH	42 F	Dry		0
[23:45-00:00]	4	39MPH	42 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	4	39MPH	42 F	Dry		0
[00:15-00:30]	1	38MPH	42 F	Dry		0
[00:30-00:45]	7	40MPH	42 F	Dry		0
[00:45-01:00]	1	48MPH	42 F	Dry		0
[01:00-01:15]	3	43MPH	42 F	Dry		0
[01:15-01:30]	4	43MPH	41 F	Dry		0
[01:30-01:45]	2	40MPH	41 F	Dry		0
[01:45-02:00]	2	43MPH	41 F	Dry		0
[02:00-02:15]	0	0MPH	41 F	Dry		0
[02:15-02:30]	3	39MPH	39 F	Dry		0
[02:30-02:45]	0	0MPH	39 F	Dry		0
[02:45-03:00]	0	0MPH	39 F	Dry		0
[03:00-03:15]	0	0MPH	39 F	Dry		0
[03:15-03:30]	1	38MPH	39 F	Dry		0
[03:30-03:45]	0	0MPH	39 F	Dry		0
[03:45-04:00]	0	0MPH	39 F	Dry		0
[04:00-04:15]	1	48MPH	39 F	Dry		0
[04:15-04:30]	1	38MPH	39 F	Dry		0
[04:30-04:45]	0	0MPH	39 F	Dry		0
[04:45-05:00]	1	38MPH	39 F	Dry		0
[05:00-05:15]	1	48MPH	39 F	Dry		0
[05:15-05:30]	2	42MPH	39 F	Dry		0
[05:30-05:45]	2	47MPH	39 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 10	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4545
County: Leon	AADT Factor: 1	AADT Count: 2,273

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	2	45MPH	39 F	Dry		0
[06:00-06:15]	2	48MPH	39 F	Dry		0
[06:15-06:30]	6	45MPH	39 F	Dry		0
[06:30-06:45]	4	46MPH	37 F	Dry		0
[06:45-07:00]	14	44MPH	37 F	Dry		0
[07:00-07:15]	9	40MPH	37 F	Dry		0
[07:15-07:30]	13	44MPH	37 F	Dry		0
[07:30-07:45]	12	43MPH	37 F	Dry		0
[07:45-08:00]	22	40MPH	37 F	Dry		0
[08:00-08:15]	37	41MPH	37 F	Dry		0
[08:15-08:30]	39	38MPH	37 F	Dry		0
[08:30-08:45]	36	39MPH	37 F	Dry		0
[08:45-09:00]	23	43MPH	37 F	Dry		0
[09:00-09:15]	21	44MPH	39 F	Dry		0
[09:15-09:30]	21	40MPH	39 F	Dry		0
[09:30-09:45]	23	39MPH	39 F	Dry		0
[09:45-10:00]	7	49MPH	39 F	Dry		0
[10:00-10:15]	17	43MPH	42 F	Dry		0
[10:15-10:30]	17	42MPH	42 F	Dry		0
[10:30-10:45]	16	43MPH	42 F	Dry		0
[10:45-11:00]	13	41MPH	44 F	Dry		0
[11:00-11:15]	17	43MPH	44 F	Dry		0
[11:15-11:30]	29	40MPH	44 F	Dry		0
[11:30-11:45]	15	41MPH	44 F	Dry		0
[11:45-12:00]	15	44MPH	46 F	Dry		0
[12:00-12:15]	20	42MPH	50 F	Dry		0
[12:15-12:30]	27	44MPH	50 F	Dry		0
[12:30-12:45]	24	43MPH	48 F	Dry		0
[12:45-13:00]	25	41MPH	50 F	Dry		0
[13:00-13:15]	28	41MPH	52 F	Dry		0
[13:15-13:30]	27	40MPH	52 F	Dry		0
[13:30-13:45]	28	41MPH	52 F	Dry		0
[13:45-14:00]	30	41MPH	52 F	Dry		0
[14:00-14:15]	24	40MPH	52 F	Dry		0
[14:15-14:30]	28	39MPH	52 F	Dry		0
[14:30-14:45]	22	44MPH	54 F	Dry		0
[14:45-15:00]	36	40MPH	58 F	Dry		0
[15:00-15:15]	34	40MPH	62 F	Dry		0
[15:15-15:30]	62	39MPH	60 F	Dry		1
[15:30-15:45]	53	40MPH	58 F	Dry		0

[Raw] Volume Report

HI-Star ID: 3644	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 10	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 4545
County: Leon	AADT Factor: 1	AADT Count: 2,273

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	45	41MPH	56 F	Dry		0
[16:00-16:15]	44	42MPH	56 F	Dry		0
[16:15-16:30]	69	38MPH	54 F	Dry		1
[16:30-16:45]	53	41MPH	54 F	Dry		0
[16:45-17:00]	74	40MPH	52 F	Dry		1
[17:00-17:15]	71	42MPH	52 F	Dry		1
[17:15-17:30]	112	38MPH	52 F	Dry		2
[17:30-17:45]	90	38MPH	52 F	Dry		1
[17:45-18:00]	64	38MPH	52 F	Dry		1
[18:00-18:15]	89	37MPH	50 F	Dry		1
[18:15-18:30]	88	36MPH	50 F	Dry		1
[18:30-18:45]	50	40MPH	50 F	Dry		0
[18:45-19:00]	49	39MPH	48 F	Dry		0
[19:00-19:15]	57	39MPH	48 F	Dry		1
[19:15-19:30]	27	41MPH	48 F	Dry		0
[19:30-19:45]	30	42MPH	48 F	Dry		0
[19:45-20:00]	26	38MPH	48 F	Dry		0
[20:00-20:15]	38	37MPH	48 F	Dry		0
[20:15-20:30]	42	40MPH	46 F	Dry		0
[20:30-20:45]	25	40MPH	46 F	Dry		0
[20:45-21:00]	24	43MPH	46 F	Dry		0
[21:00-21:15]	23	43MPH	46 F	Dry		0
[21:15-21:30]	27	42MPH	44 F	Dry		0
[21:30-21:45]	32	40MPH	44 F	Dry		0
[21:45-22:00]	23	40MPH	44 F	Dry		0
[22:00-22:15]	13	41MPH	44 F	Dry		0
[22:15-22:30]	14	41MPH	44 F	Dry		0
[22:30-22:45]	5	46MPH	44 F	Dry		0
[22:45-23:00]	15	42MPH	44 F	Dry		0
[23:00-23:15]	5	46MPH	44 F	Dry		0
[23:15-23:30]	6	43MPH	42 F	Dry		0
[23:30-23:45]	7	41MPH	42 F	Dry		0
[23:45-00:00]	8	39MPH	42 F	Dry		0
	4545	41 MPH	44 F			

[Raw] Volume Report

HI-Star ID: 1957	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 1	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 17874
County: Leon	AADT Factor: 1	AADT Count: 8,937

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	7	44MPH	42 F	Dry		0
[00:15-00:30]	4	45MPH	42 F	Dry		0
[00:30-00:45]	5	44MPH	42 F	Dry		0
[00:45-01:00]	2	45MPH	42 F	Dry		0
[01:00-01:15]	3	47MPH	42 F	Dry		0
[01:15-01:30]	2	45MPH	42 F	Dry		0
[01:30-01:45]	2	48MPH	41 F	Dry		0
[01:45-02:00]	1	58MPH	41 F	Dry		0
[02:00-02:15]	3	51MPH	41 F	Dry		0
[02:15-02:30]	1	62MPH	39 F	Dry		0
[02:30-02:45]	1	58MPH	39 F	Dry		0
[02:45-03:00]	6	54MPH	39 F	Dry		0
[03:00-03:15]	3	44MPH	39 F	Dry		0
[03:15-03:30]	6	47MPH	39 F	Dry		0
[03:30-03:45]	4	49MPH	39 F	Dry		0
[03:45-04:00]	3	54MPH	39 F	Dry		0
[04:00-04:15]	9	48MPH	39 F	Dry		0
[04:15-04:30]	8	49MPH	39 F	Dry		0
[04:30-04:45]	10	47MPH	39 F	Dry		0
[04:45-05:00]	15	45MPH	39 F	Dry		0
[05:00-05:15]	24	46MPH	39 F	Dry		0
[05:15-05:30]	26	47MPH	39 F	Dry		0
[05:30-05:45]	36	48MPH	39 F	Dry		0
[05:45-06:00]	51	48MPH	39 F	Dry		0
[06:00-06:15]	54	44MPH	39 F	Dry		1
[06:15-06:30]	99	44MPH	39 F	Dry		1
[06:30-06:45]	165	43MPH	39 F	Dry		3
[06:45-07:00]	242	41MPH	39 F	Dry		5
[07:00-07:15]	337	38MPH	39 F	Dry		7
[07:15-07:30]	373	40MPH	39 F	Dry		8
[07:30-07:45]	290	43MPH	39 F	Dry		6
[07:45-08:00]	283	42MPH	39 F	Dry		7
[08:00-08:15]	291	43MPH	39 F	Dry		6
[08:15-08:30]	248	42MPH	39 F	Dry		5
[08:30-08:45]	210	45MPH	39 F	Dry		4
[08:45-09:00]	220	44MPH	42 F	Dry		5
[09:00-09:15]	197	45MPH	42 F	Dry		3
[09:15-09:30]	168	45MPH	44 F	Dry		6
[09:30-09:45]	163	45MPH	46 F	Dry		3
[09:45-10:00]	116	45MPH	48 F	Dry		2

[Raw] Volume Report

HI-Star ID: 1957	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 1	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 17874
County: Leon	AADT Factor: 1	AADT Count: 8,937

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	104	46MPH	48 F	Dry		1
[10:15-10:30]	101	44MPH	48 F	Dry		1
[10:30-10:45]	99	46MPH	50 F	Dry		1
[10:45-11:00]	104	46MPH	52 F	Dry		1
[11:00-11:15]	117	45MPH	54 F	Dry		2
[11:15-11:30]	133	45MPH	56 F	Dry		2
[11:30-11:45]	87	45MPH	56 F	Dry		1
[11:45-12:00]	116	44MPH	56 F	Dry		2
[12:00-12:15]	111	45MPH	56 F	Dry		1
[12:15-12:30]	113	43MPH	56 F	Dry		2
[12:30-12:45]	98	45MPH	54 F	Dry		1
[12:45-13:00]	110	43MPH	52 F	Dry		2
[13:00-13:15]	110	45MPH	52 F	Dry		1
[13:15-13:30]	117	45MPH	52 F	Dry		1
[13:30-13:45]	120	44MPH	52 F	Dry		2
[13:45-14:00]	108	45MPH	52 F	Dry		2
[14:00-14:15]	105	45MPH	52 F	Dry		1
[14:15-14:30]	77	46MPH	52 F	Dry		1
[14:30-14:45]	121	44MPH	52 F	Dry		2
[14:45-15:00]	108	44MPH	52 F	Dry		1
[15:00-15:15]	112	46MPH	52 F	Dry		1
[15:15-15:30]	111	43MPH	52 F	Dry		2
[15:30-15:45]	105	43MPH	52 F	Dry		1
[15:45-16:00]	103	44MPH	52 F	Dry		1
[16:00-16:15]	193	39MPH	52 F	Dry		4
[16:15-16:30]	133	43MPH	50 F	Dry		2
[16:30-16:45]	130	45MPH	50 F	Dry		2
[16:45-17:00]	142	43MPH	50 F	Dry		3
[17:00-17:15]	121	42MPH	50 F	Dry		2
[17:15-17:30]	124	41MPH	50 F	Dry		2
[17:30-17:45]	145	42MPH	48 F	Dry		3
[17:45-18:00]	126	41MPH	48 F	Dry		2
[18:00-18:15]	125	39MPH	48 F	Dry		3
[18:15-18:30]	117	42MPH	48 F	Dry		2
[18:30-18:45]	113	44MPH	48 F	Dry		2
[18:45-19:00]	130	42MPH	48 F	Dry		2
[19:00-19:15]	96	42MPH	48 F	Dry		1
[19:15-19:30]	79	43MPH	48 F	Dry		1
[19:30-19:45]	75	43MPH	46 F	Dry		1
[19:45-20:00]	110	43MPH	46 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1957	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 1	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 17874
County: Leon	AADT Factor: 1	AADT Count: 8,937

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	70	45MPH	46 F	Dry		1
[20:15-20:30]	66	43MPH	46 F	Dry		1
[20:30-20:45]	46	45MPH	46 F	Dry		0
[20:45-21:00]	50	43MPH	46 F	Dry		0
[21:00-21:15]	47	47MPH	46 F	Dry		0
[21:15-21:30]	46	45MPH	44 F	Dry		0
[21:30-21:45]	35	44MPH	44 F	Dry		0
[21:45-22:00]	22	44MPH	44 F	Dry		0
[22:00-22:15]	21	44MPH	44 F	Dry		0
[22:15-22:30]	23	45MPH	44 F	Dry		0
[22:30-22:45]	17	48MPH	44 F	Dry		0
[22:45-23:00]	9	48MPH	42 F	Dry		0
[23:00-23:15]	12	45MPH	42 F	Dry		0
[23:15-23:30]	11	48MPH	42 F	Dry		0
[23:30-23:45]	10	46MPH	42 F	Dry		0
[23:45-00:00]	3	51MPH	42 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	8	44MPH	42 F	Dry		0
[00:15-00:30]	2	43MPH	41 F	Dry		0
[00:30-00:45]	3	44MPH	41 F	Dry		0
[00:45-01:00]	3	42MPH	41 F	Dry		0
[01:00-01:15]	2	48MPH	39 F	Dry		0
[01:15-01:30]	2	40MPH	39 F	Dry		0
[01:30-01:45]	3	46MPH	39 F	Dry		0
[01:45-02:00]	4	46MPH	39 F	Dry		0
[02:00-02:15]	2	48MPH	39 F	Dry		0
[02:15-02:30]	4	48MPH	39 F	Dry		0
[02:30-02:45]	4	41MPH	39 F	Dry		0
[02:45-03:00]	2	53MPH	39 F	Dry		0
[03:00-03:15]	2	53MPH	39 F	Dry		0
[03:15-03:30]	6	46MPH	39 F	Dry		0
[03:30-03:45]	4	52MPH	39 F	Dry		0
[03:45-04:00]	1	58MPH	39 F	Dry		0
[04:00-04:15]	12	46MPH	37 F	Dry		0
[04:15-04:30]	8	46MPH	37 F	Dry		0
[04:30-04:45]	11	50MPH	37 F	Dry		0
[04:45-05:00]	20	50MPH	37 F	Dry		0
[05:00-05:15]	15	46MPH	37 F	Dry		0
[05:15-05:30]	27	45MPH	37 F	Dry		0
[05:30-05:45]	39	47MPH	37 F	Dry		0

[Raw] Volume Report

HI-Star ID: 1957	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 1	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 17874
County: Leon	AADT Factor: 1	AADT Count: 8,937

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	48	44MPH	37 F	Dry		0
[06:00-06:15]	44	47MPH	37 F	Dry		0
[06:15-06:30]	117	45MPH	37 F	Dry		2
[06:30-06:45]	182	43MPH	37 F	Dry		3
[06:45-07:00]	236	42MPH	37 F	Dry		5
[07:00-07:15]	322	38MPH	37 F	Dry		7
[07:15-07:30]	363	38MPH	37 F	Dry		9
[07:30-07:45]	299	42MPH	37 F	Dry		6
[07:45-08:00]	279	42MPH	37 F	Dry		5
[08:00-08:15]	257	44MPH	37 F	Dry		5
[08:15-08:30]	280	43MPH	39 F	Dry		5
[08:30-08:45]	200	44MPH	39 F	Dry		4
[08:45-09:00]	227	44MPH	39 F	Dry		5
[09:00-09:15]	231	43MPH	42 F	Dry		5
[09:15-09:30]	203	46MPH	42 F	Dry		3
[09:30-09:45]	166	45MPH	44 F	Dry		3
[09:45-10:00]	123	44MPH	48 F	Dry		2
[10:00-10:15]	100	45MPH	50 F	Dry		1
[10:15-10:30]	138	45MPH	52 F	Dry		2
[10:30-10:45]	108	44MPH	52 F	Dry		1
[10:45-11:00]	126	43MPH	54 F	Dry		2
[11:00-11:15]	123	46MPH	56 F	Dry		2
[11:15-11:30]	116	45MPH	58 F	Dry		2
[11:30-11:45]	140	43MPH	60 F	Dry		4
[11:45-12:00]	123	44MPH	60 F	Dry		2
[12:00-12:15]	105	46MPH	60 F	Dry		1
[12:15-12:30]	116	45MPH	58 F	Dry		2
[12:30-12:45]	120	46MPH	60 F	Dry		2
[12:45-13:00]	124	44MPH	62 F	Dry		2
[13:00-13:15]	125	45MPH	62 F	Dry		2
[13:15-13:30]	101	46MPH	58 F	Dry		1
[13:30-13:45]	118	45MPH	56 F	Dry		2
[13:45-14:00]	132	45MPH	54 F	Dry		2
[14:00-14:15]	117	45MPH	54 F	Dry		2
[14:15-14:30]	108	46MPH	54 F	Dry		1
[14:30-14:45]	145	42MPH	54 F	Dry		3
[14:45-15:00]	106	44MPH	52 F	Dry		2
[15:00-15:15]	108	44MPH	52 F	Dry		2
[15:15-15:30]	112	45MPH	52 F	Dry		4
[15:30-15:45]	101	44MPH	52 F	Dry		1

[Raw] Volume Report

HI-Star ID: 1957	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 1	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 17874
County: Leon	AADT Factor: 1	AADT Count: 8,937

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	98	45MPH	52 F	Dry		1
[16:00-16:15]	170	44MPH	52 F	Dry		3
[16:15-16:30]	140	43MPH	52 F	Dry		2
[16:30-16:45]	126	44MPH	52 F	Dry		2
[16:45-17:00]	130	45MPH	52 F	Dry		2
[17:00-17:15]	137	45MPH	52 F	Dry		2
[17:15-17:30]	100	46MPH	50 F	Dry		1
[17:30-17:45]	128	42MPH	50 F	Dry		2
[17:45-18:00]	158	41MPH	50 F	Dry		3
[18:00-18:15]	164	42MPH	50 F	Dry		3
[18:15-18:30]	164	41MPH	50 F	Dry		5
[18:30-18:45]	141	41MPH	48 F	Dry		2
[18:45-19:00]	142	43MPH	48 F	Dry		2
[19:00-19:15]	98	43MPH	48 F	Dry		1
[19:15-19:30]	68	44MPH	48 F	Dry		1
[19:30-19:45]	89	44MPH	46 F	Dry		1
[19:45-20:00]	66	44MPH	46 F	Dry		1
[20:00-20:15]	97	42MPH	46 F	Dry		1
[20:15-20:30]	51	43MPH	44 F	Dry		0
[20:30-20:45]	46	46MPH	44 F	Dry		0
[20:45-21:00]	49	45MPH	44 F	Dry		0
[21:00-21:15]	58	44MPH	44 F	Dry		0
[21:15-21:30]	33	43MPH	44 F	Dry		0
[21:30-21:45]	45	43MPH	44 F	Dry		0
[21:45-22:00]	33	47MPH	44 F	Dry		0
[22:00-22:15]	20	46MPH	42 F	Dry		0
[22:15-22:30]	32	43MPH	42 F	Dry		0
[22:30-22:45]	13	46MPH	42 F	Dry		0
[22:45-23:00]	22	48MPH	42 F	Dry		0
[23:00-23:15]	16	47MPH	42 F	Dry		0
[23:15-23:30]	11	47MPH	42 F	Dry		0
[23:30-23:45]	18	47MPH	42 F	Dry		0
[23:45-00:00]	13	44MPH	42 F	Dry		0
	17874	45 MPH	45 F			

[Raw] Volume Report

HI-Star ID: 2847	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 4	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9193
County: Leon	AADT Factor: 1	AADT Count: 4,597

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	2	60MPH	37 F	Dry		0
[00:15-00:30]	1	58MPH	37 F	Dry		0
[00:30-00:45]	2	35MPH	37 F	Dry		0
[00:45-01:00]	2	42MPH	37 F	Dry		0
[01:00-01:15]	2	50MPH	37 F	Dry		0
[01:15-01:30]	1	52MPH	37 F	Dry		0
[01:30-01:45]	2	57MPH	37 F	Dry		0
[01:45-02:00]	1	58MPH	37 F	Dry		0
[02:00-02:15]	2	60MPH	35 F	Dry		0
[02:15-02:30]	1	28MPH	35 F	Dry		0
[02:30-02:45]	1	58MPH	35 F	Dry		0
[02:45-03:00]	4	61MPH	35 F	Dry		0
[03:00-03:15]	3	52MPH	35 F	Dry		0
[03:15-03:30]	3	58MPH	35 F	Dry		0
[03:30-03:45]	1	72MPH	35 F	Dry		0
[03:45-04:00]	3	64MPH	35 F	Dry		0
[04:00-04:15]	3	58MPH	35 F	Dry		0
[04:15-04:30]	4	41MPH	35 F	Dry		0
[04:30-04:45]	2	53MPH	35 F	Dry		0
[04:45-05:00]	5	44MPH	35 F	Dry		0
[05:00-05:15]	11	50MPH	35 F	Dry		0
[05:15-05:30]	7	48MPH	35 F	Dry		0
[05:30-05:45]	13	54MPH	35 F	Dry		0
[05:45-06:00]	23	49MPH	35 F	Dry		0
[06:00-06:15]	22	49MPH	35 F	Dry		0
[06:15-06:30]	45	50MPH	35 F	Dry		0
[06:30-06:45]	82	47MPH	35 F	Dry		1
[06:45-07:00]	124	47MPH	35 F	Dry		2
[07:00-07:15]	169	36MPH	35 F	Dry		7
[07:15-07:30]	158	30MPH	35 F	Dry		8
[07:30-07:45]	117	42MPH	35 F	Dry		3
[07:45-08:00]	116	39MPH	35 F	Dry		4
[08:00-08:15]	155	40MPH	35 F	Dry		4
[08:15-08:30]	105	41MPH	37 F	Dry		2
[08:30-08:45]	104	45MPH	37 F	Dry		2
[08:45-09:00]	74	47MPH	37 F	Dry		1
[09:00-09:15]	88	48MPH	37 F	Dry		1
[09:15-09:30]	77	49MPH	39 F	Dry		1
[09:30-09:45]	70	47MPH	39 F	Dry		1
[09:45-10:00]	53	50MPH	41 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 4	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9193
County: Leon	AADT Factor: 1	AADT Count: 4,597

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	51	49MPH	42 F	Dry		0
[10:15-10:30]	50	49MPH	42 F	Dry		0
[10:30-10:45]	51	52MPH	44 F	Dry		0
[10:45-11:00]	48	49MPH	46 F	Dry		0
[11:00-11:15]	58	50MPH	50 F	Dry		1
[11:15-11:30]	66	52MPH	48 F	Dry		1
[11:30-11:45]	43	51MPH	50 F	Dry		0
[11:45-12:00]	54	49MPH	50 F	Dry		1
[12:00-12:15]	65	51MPH	50 F	Dry		1
[12:15-12:30]	53	51MPH	50 F	Dry		1
[12:30-12:45]	47	49MPH	50 F	Dry		0
[12:45-13:00]	54	49MPH	48 F	Dry		0
[13:00-13:15]	67	50MPH	48 F	Dry		1
[13:15-13:30]	57	49MPH	48 F	Dry		0
[13:30-13:45]	66	47MPH	48 F	Dry		1
[13:45-14:00]	55	49MPH	48 F	Dry		1
[14:00-14:15]	46	51MPH	48 F	Dry		0
[14:15-14:30]	59	52MPH	48 F	Dry		1
[14:30-14:45]	77	50MPH	50 F	Dry		1
[14:45-15:00]	57	50MPH	50 F	Dry		0
[15:00-15:15]	85	48MPH	50 F	Dry		1
[15:15-15:30]	67	48MPH	48 F	Dry		1
[15:30-15:45]	58	52MPH	48 F	Dry		1
[15:45-16:00]	72	51MPH	48 F	Dry		1
[16:00-16:15]	93	46MPH	48 F	Dry		1
[16:15-16:30]	75	49MPH	48 F	Dry		1
[16:30-16:45]	80	49MPH	48 F	Dry		3
[16:45-17:00]	84	50MPH	48 F	Dry		1
[17:00-17:15]	66	51MPH	46 F	Dry		1
[17:15-17:30]	86	48MPH	46 F	Dry		1
[17:30-17:45]	88	48MPH	46 F	Dry		1
[17:45-18:00]	83	46MPH	46 F	Dry		1
[18:00-18:15]	87	43MPH	46 F	Dry		1
[18:15-18:30]	61	45MPH	44 F	Dry		1
[18:30-18:45]	75	47MPH	44 F	Dry		1
[18:45-19:00]	72	48MPH	44 F	Dry		1
[19:00-19:15]	68	49MPH	44 F	Dry		1
[19:15-19:30]	59	49MPH	44 F	Dry		1
[19:30-19:45]	33	46MPH	44 F	Dry		0
[19:45-20:00]	46	52MPH	44 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 4	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9193
County: Leon	AADT Factor: 1	AADT Count: 4,597

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	43	48MPH	44 F	Dry		0
[20:15-20:30]	43	47MPH	44 F	Dry		0
[20:30-20:45]	30	49MPH	44 F	Dry		0
[20:45-21:00]	28	51MPH	44 F	Dry		0
[21:00-21:15]	23	50MPH	42 F	Dry		0
[21:15-21:30]	18	49MPH	42 F	Dry		0
[21:30-21:45]	17	48MPH	42 F	Dry		0
[21:45-22:00]	17	50MPH	42 F	Dry		0
[22:00-22:15]	10	50MPH	42 F	Dry		0
[22:15-22:30]	11	52MPH	42 F	Dry		0
[22:30-22:45]	10	49MPH	42 F	Dry		0
[22:45-23:00]	5	49MPH	42 F	Dry		0
[23:00-23:15]	6	42MPH	41 F	Dry		0
[23:15-23:30]	8	50MPH	41 F	Dry		0
[23:30-23:45]	6	46MPH	39 F	Dry		0
[23:45-00:00]	0	0MPH	39 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	4	50MPH	39 F	Dry		0
[00:15-00:30]	2	55MPH	39 F	Dry		0
[00:30-00:45]	5	54MPH	39 F	Dry		0
[00:45-01:00]	0	0MPH	39 F	Dry		0
[01:00-01:15]	2	48MPH	37 F	Dry		0
[01:15-01:30]	2	38MPH	37 F	Dry		0
[01:30-01:45]	3	56MPH	37 F	Dry		0
[01:45-02:00]	2	47MPH	37 F	Dry		0
[02:00-02:15]	0	0MPH	37 F	Dry		0
[02:15-02:30]	2	55MPH	37 F	Dry		0
[02:30-02:45]	2	52MPH	37 F	Dry		0
[02:45-03:00]	2	53MPH	37 F	Dry		0
[03:00-03:15]	1	52MPH	37 F	Dry		0
[03:15-03:30]	2	50MPH	35 F	Dry		0
[03:30-03:45]	1	75MPH	35 F	Dry		0
[03:45-04:00]	2	55MPH	35 F	Dry		0
[04:00-04:15]	2	52MPH	35 F	Dry		0
[04:15-04:30]	2	62MPH	35 F	Dry		0
[04:30-04:45]	6	64MPH	35 F	Dry		0
[04:45-05:00]	10	55MPH	35 F	Dry		0
[05:00-05:15]	6	57MPH	35 F	Dry		0
[05:15-05:30]	11	51MPH	35 F	Dry		0
[05:30-05:45]	15	51MPH	35 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2847	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 4	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9193
County: Leon	AADT Factor: 1	AADT Count: 4,597

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	23	53MPH	35 F	Dry		0
[06:00-06:15]	25	54MPH	35 F	Dry		0
[06:15-06:30]	52	50MPH	35 F	Dry		0
[06:30-06:45]	93	45MPH	35 F	Dry		1
[06:45-07:00]	128	42MPH	35 F	Dry		3
[07:00-07:15]	173	37MPH	35 F	Dry		5
[07:15-07:30]	122	43MPH	35 F	Dry		3
[07:30-07:45]	111	42MPH	35 F	Dry		2
[07:45-08:00]	116	40MPH	35 F	Dry		2
[08:00-08:15]	138	40MPH	35 F	Dry		3
[08:15-08:30]	134	41MPH	35 F	Dry		3
[08:30-08:45]	101	48MPH	37 F	Dry		1
[08:45-09:00]	102	48MPH	37 F	Dry		1
[09:00-09:15]	84	48MPH	37 F	Dry		1
[09:15-09:30]	93	48MPH	37 F	Dry		1
[09:30-09:45]	70	48MPH	39 F	Dry		1
[09:45-10:00]	53	48MPH	39 F	Dry		1
[10:00-10:15]	61	48MPH	39 F	Dry		1
[10:15-10:30]	64	48MPH	41 F	Dry		1
[10:30-10:45]	51	51MPH	44 F	Dry		0
[10:45-11:00]	75	47MPH	46 F	Dry		2
[11:00-11:15]	53	51MPH	50 F	Dry		0
[11:15-11:30]	68	49MPH	48 F	Dry		1
[11:30-11:45]	60	49MPH	46 F	Dry		1
[11:45-12:00]	83	49MPH	44 F	Dry		1
[12:00-12:15]	46	51MPH	44 F	Dry		0
[12:15-12:30]	53	53MPH	44 F	Dry		0
[12:30-12:45]	71	48MPH	44 F	Dry		1
[12:45-13:00]	73	48MPH	44 F	Dry		5
[13:00-13:15]	67	50MPH	44 F	Dry		1
[13:15-13:30]	60	48MPH	46 F	Dry		1
[13:30-13:45]	68	49MPH	46 F	Dry		1
[13:45-14:00]	72	49MPH	48 F	Dry		1
[14:00-14:15]	50	55MPH	48 F	Dry		0
[14:15-14:30]	64	50MPH	50 F	Dry		1
[14:30-14:45]	72	49MPH	50 F	Dry		1
[14:45-15:00]	62	47MPH	50 F	Dry		1
[15:00-15:15]	69	49MPH	48 F	Dry		1
[15:15-15:30]	79	50MPH	48 F	Dry		1
[15:30-15:45]	63	51MPH	48 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2847	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 4	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 9193
County: Leon	AADT Factor: 1	AADT Count: 4,597

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	62	52MPH	48 F	Dry		1
[16:00-16:15]	84	48MPH	48 F	Dry		1
[16:15-16:30]	66	45MPH	48 F	Dry		1
[16:30-16:45]	68	49MPH	48 F	Dry		1
[16:45-17:00]	75	50MPH	48 F	Dry		1
[17:00-17:15]	73	51MPH	48 F	Dry		1
[17:15-17:30]	83	50MPH	46 F	Dry		1
[17:30-17:45]	76	49MPH	46 F	Dry		1
[17:45-18:00]	86	48MPH	46 F	Dry		1
[18:00-18:15]	85	47MPH	44 F	Dry		1
[18:15-18:30]	86	47MPH	44 F	Dry		1
[18:30-18:45]	74	44MPH	44 F	Dry		1
[18:45-19:00]	82	47MPH	44 F	Dry		1
[19:00-19:15]	52	47MPH	44 F	Dry		0
[19:15-19:30]	38	49MPH	42 F	Dry		0
[19:30-19:45]	50	49MPH	42 F	Dry		0
[19:45-20:00]	37	49MPH	42 F	Dry		0
[20:00-20:15]	55	45MPH	42 F	Dry		1
[20:15-20:30]	30	45MPH	42 F	Dry		0
[20:30-20:45]	32	49MPH	42 F	Dry		0
[20:45-21:00]	39	46MPH	42 F	Dry		0
[21:00-21:15]	27	49MPH	42 F	Dry		0
[21:15-21:30]	29	47MPH	41 F	Dry		0
[21:30-21:45]	26	46MPH	41 F	Dry		0
[21:45-22:00]	22	48MPH	39 F	Dry		0
[22:00-22:15]	12	44MPH	39 F	Dry		0
[22:15-22:30]	13	50MPH	39 F	Dry		0
[22:30-22:45]	7	55MPH	39 F	Dry		0
[22:45-23:00]	9	48MPH	39 F	Dry		10
[23:00-23:15]	11	51MPH	39 F	Dry		0
[23:15-23:30]	8	48MPH	39 F	Dry		0
[23:30-23:45]	7	52MPH	39 F	Dry		0
[23:45-00:00]	8	51MPH	39 F	Dry		0
	9193	49 MPH	41 F			

[Raw] Volume Report

HI-Star ID: 2683	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 7	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7462
County: Leon	AADT Factor: 1	AADT Count: 3,731

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[00:00-00:15]	2	42MPH	44 F	Dry		0
[00:15-00:30]	3	40MPH	44 F	Dry		0
[00:30-00:45]	4	51MPH	42 F	Dry		0
[00:45-01:00]	5	43MPH	42 F	Dry		0
[01:00-01:15]	3	44MPH	42 F	Dry		0
[01:15-01:30]	1	52MPH	42 F	Dry		0
[01:30-01:45]	0	0MPH	42 F	Dry		0
[01:45-02:00]	1	38MPH	42 F	Dry		0
[02:00-02:15]	2	43MPH	42 F	Dry		0
[02:15-02:30]	1	48MPH	42 F	Dry		0
[02:30-02:45]	1	48MPH	42 F	Dry		0
[02:45-03:00]	5	48MPH	42 F	Dry		0
[03:00-03:15]	2	40MPH	42 F	Dry		0
[03:15-03:30]	2	42MPH	42 F	Dry		0
[03:30-03:45]	2	42MPH	41 F	Dry		0
[03:45-04:00]	2	38MPH	41 F	Dry		0
[04:00-04:15]	1	48MPH	41 F	Dry		0
[04:15-04:30]	4	46MPH	41 F	Dry		0
[04:30-04:45]	1	42MPH	39 F	Dry		0
[04:45-05:00]	2	45MPH	39 F	Dry		0
[05:00-05:15]	3	42MPH	39 F	Dry		0
[05:15-05:30]	2	27MPH	39 F	Dry		0
[05:30-05:45]	6	40MPH	39 F	Dry		0
[05:45-06:00]	14	41MPH	39 F	Dry		0
[06:00-06:15]	10	36MPH	39 F	Dry		0
[06:15-06:30]	17	44MPH	39 F	Dry		0
[06:30-06:45]	39	36MPH	39 F	Dry		0
[06:45-07:00]	64	37MPH	39 F	Dry		1
[07:00-07:15]	105	34MPH	39 F	Dry		2
[07:15-07:30]	74	36MPH	39 F	Dry		4
[07:30-07:45]	43	37MPH	39 F	Dry		0
[07:45-08:00]	53	37MPH	39 F	Dry		0
[08:00-08:15]	84	34MPH	39 F	Dry		4
[08:15-08:30]	75	38MPH	39 F	Dry		1
[08:30-08:45]	83	33MPH	39 F	Dry		8
[08:45-09:00]	74	38MPH	39 F	Dry		1
[09:00-09:15]	70	37MPH	41 F	Dry		6
[09:15-09:30]	75	37MPH	42 F	Dry		4
[09:30-09:45]	44	40MPH	46 F	Dry		0
[09:45-10:00]	42	39MPH	48 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 7	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7462
County: Leon	AADT Factor: 1	AADT Count: 3,731

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[10:00-10:15]	31	41MPH	48 F	Dry		8
[10:15-10:30]	34	37MPH	50 F	Dry		0
[10:30-10:45]	43	40MPH	52 F	Dry		8
[10:45-11:00]	33	38MPH	54 F	Dry		0
[11:00-11:15]	41	40MPH	56 F	Dry		0
[11:15-11:30]	35	38MPH	60 F	Dry		0
[11:30-11:45]	23	39MPH	62 F	Dry		0
[11:45-12:00]	39	43MPH	64 F	Dry		7
[12:00-12:15]	38	41MPH	64 F	Dry		0
[12:15-12:30]	43	40MPH	60 F	Dry		0
[12:30-12:45]	42	39MPH	58 F	Dry		0
[12:45-13:00]	44	39MPH	56 F	Dry		0
[13:00-13:15]	48	38MPH	54 F	Dry		4
[13:15-13:30]	30	41MPH	54 F	Dry		4
[13:30-13:45]	50	39MPH	54 F	Dry		1
[13:45-14:00]	36	41MPH	54 F	Dry		0
[14:00-14:15]	45	36MPH	54 F	Dry		2
[14:15-14:30]	46	39MPH	54 F	Dry		0
[14:30-14:45]	60	37MPH	54 F	Dry		1
[14:45-15:00]	45	38MPH	54 F	Dry		11
[15:00-15:15]	80	33MPH	54 F	Dry		1
[15:15-15:30]	70	38MPH	54 F	Dry		1
[15:30-15:45]	79	38MPH	52 F	Dry		1
[15:45-16:00]	95	35MPH	52 F	Dry		2
[16:00-16:15]	72	37MPH	52 F	Dry		1
[16:15-16:30]	74	40MPH	52 F	Dry		1
[16:30-16:45]	85	37MPH	52 F	Dry		18
[16:45-17:00]	81	36MPH	52 F	Dry		1
[17:00-17:15]	67	40MPH	52 F	Dry		1
[17:15-17:30]	106	37MPH	50 F	Dry		3
[17:30-17:45]	119	35MPH	50 F	Dry		2
[17:45-18:00]	125	30MPH	50 F	Dry		5
[18:00-18:15]	107	29MPH	50 F	Dry		5
[18:15-18:30]	87	37MPH	50 F	Dry		1
[18:30-18:45]	76	38MPH	50 F	Dry		2
[18:45-19:00]	67	37MPH	48 F	Dry		3
[19:00-19:15]	68	40MPH	48 F	Dry		1
[19:15-19:30]	42	41MPH	48 F	Dry		0
[19:30-19:45]	32	38MPH	48 F	Dry		0
[19:45-20:00]	30	41MPH	48 F	Dry		3

[Raw] Volume Report

HI-Star ID: 2683	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 7	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7462
County: Leon	AADT Factor: 1	AADT Count: 3,731

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Wed,Dec/08/2010						
[20:00-20:15]	47	41MPH	48 F	Dry		0
[20:15-20:30]	41	37MPH	48 F	Dry		0
[20:30-20:45]	43	41MPH	48 F	Dry		0
[20:45-21:00]	23	44MPH	48 F	Dry		0
[21:00-21:15]	25	35MPH	46 F	Dry		0
[21:15-21:30]	21	39MPH	46 F	Dry		0
[21:30-21:45]	19	40MPH	46 F	Dry		0
[21:45-22:00]	12	45MPH	46 F	Dry		0
[22:00-22:15]	13	40MPH	46 F	Dry		0
[22:15-22:30]	18	42MPH	46 F	Dry		0
[22:30-22:45]	7	41MPH	44 F	Dry		0
[22:45-23:00]	5	43MPH	44 F	Dry		0
[23:00-23:15]	6	47MPH	42 F	Dry		0
[23:15-23:30]	8	48MPH	42 F	Dry		0
[23:30-23:45]	8	39MPH	42 F	Dry		0
[23:45-00:00]	2	43MPH	42 F	Dry		0
Thu,Dec/09/2010						
[00:00-00:15]	4	43MPH	42 F	Dry		0
[00:15-00:30]	2	47MPH	42 F	Dry		0
[00:30-00:45]	6	40MPH	42 F	Dry		0
[00:45-01:00]	3	46MPH	41 F	Dry		0
[01:00-01:15]	2	58MPH	41 F	Dry		0
[01:15-01:30]	3	36MPH	41 F	Dry		0
[01:30-01:45]	3	45MPH	39 F	Dry		0
[01:45-02:00]	2	40MPH	39 F	Dry		0
[02:00-02:15]	0	0MPH	39 F	Dry		0
[02:15-02:30]	1	42MPH	39 F	Dry		0
[02:30-02:45]	1	38MPH	39 F	Dry		0
[02:45-03:00]	0	0MPH	39 F	Dry		0
[03:00-03:15]	1	42MPH	39 F	Dry		0
[03:15-03:30]	2	48MPH	39 F	Dry		0
[03:30-03:45]	0	0MPH	39 F	Dry		0
[03:45-04:00]	0	0MPH	39 F	Dry		0
[04:00-04:15]	0	0MPH	39 F	Dry		0
[04:15-04:30]	1	52MPH	37 F	Dry		0
[04:30-04:45]	2	35MPH	37 F	Dry		0
[04:45-05:00]	8	39MPH	37 F	Dry		0
[05:00-05:15]	3	28MPH	37 F	Dry		0
[05:15-05:30]	6	40MPH	37 F	Dry		0
[05:30-05:45]	6	34MPH	37 F	Dry		0

[Raw] Volume Report

HI-Star ID: 2683	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 7	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7462
County: Leon	AADT Factor: 1	AADT Count: 3,731

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[05:45-06:00]	11	43MPH	37 F	Dry		0
[06:00-06:15]	8	44MPH	37 F	Dry		0
[06:15-06:30]	23	42MPH	37 F	Dry		0
[06:30-06:45]	34	38MPH	37 F	Dry		0
[06:45-07:00]	84	35MPH	37 F	Dry		1
[07:00-07:15]	88	32MPH	37 F	Dry		2
[07:15-07:30]	64	35MPH	37 F	Dry		1
[07:30-07:45]	49	35MPH	35 F	Dry		1
[07:45-08:00]	57	39MPH	35 F	Dry		1
[08:00-08:15]	87	33MPH	37 F	Dry		2
[08:15-08:30]	94	34MPH	37 F	Dry		2
[08:30-08:45]	84	32MPH	37 F	Dry		4
[08:45-09:00]	81	38MPH	37 F	Dry		4
[09:00-09:15]	85	35MPH	39 F	Dry		1
[09:15-09:30]	87	37MPH	39 F	Dry		3
[09:30-09:45]	43	37MPH	44 F	Dry		5
[09:45-10:00]	27	38MPH	46 F	Dry		0
[10:00-10:15]	47	40MPH	50 F	Dry		0
[10:15-10:30]	41	39MPH	52 F	Dry		0
[10:30-10:45]	38	41MPH	54 F	Dry		0
[10:45-11:00]	49	40MPH	56 F	Dry		1
[11:00-11:15]	36	38MPH	58 F	Dry		0
[11:15-11:30]	43	40MPH	62 F	Dry		0
[11:30-11:45]	47	37MPH	64 F	Dry		3
[11:45-12:00]	44	39MPH	68 F	Dry		1
[12:00-12:15]	33	39MPH	70 F	Dry		0
[12:15-12:30]	44	40MPH	72 F	Dry		0
[12:30-12:45]	51	42MPH	74 F	Dry		1
[12:45-13:00]	39	37MPH	76 F	Dry		1
[13:00-13:15]	48	40MPH	76 F	Dry		1
[13:15-13:30]	54	36MPH	76 F	Dry		1
[13:30-13:45]	57	39MPH	76 F	Dry		1
[13:45-14:00]	45	41MPH	78 F	Dry		0
[14:00-14:15]	39	39MPH	78 F	Dry		0
[14:15-14:30]	42	41MPH	78 F	Dry		0
[14:30-14:45]	53	39MPH	78 F	Dry		1
[14:45-15:00]	51	40MPH	78 F	Dry		1
[15:00-15:15]	67	38MPH	78 F	Dry		5
[15:15-15:30]	80	38MPH	76 F	Dry		1
[15:30-15:45]	84	39MPH	74 F	Dry		1

[Raw] Volume Report

HI-Star ID: 2683	Begin: Dec/08/2010 12:00:00 AM	End: Dec/10/2010 12:00:00 AM
Street: Bannerman Rd	Lane: Site 7	Hours: 48.00
State: FL	Oper: TEH	Period: 15
City: Tallahassee	Posted: 35	Raw Count: 7462
County: Leon	AADT Factor: 1	AADT Count: 3,731

Date And Time Range	Period Volume	Average Speed	Roadway Temperature	Roadway Surface Wet/Dry		Period Occupancy
Thu,Dec/09/2010						
[15:45-16:00]	76	38 MPH	70 F	Dry		1
[16:00-16:15]	67	38 MPH	68 F	Dry		1
[16:15-16:30]	60	40 MPH	64 F	Dry		2
[16:30-16:45]	81	36 MPH	62 F	Dry		1
[16:45-17:00]	70	39 MPH	62 F	Dry		5
[17:00-17:15]	68	38 MPH	60 F	Dry		1
[17:15-17:30]	118	34 MPH	58 F	Dry		3
[17:30-17:45]	94	39 MPH	56 F	Dry		3
[17:45-18:00]	92	36 MPH	56 F	Dry		1
[18:00-18:15]	84	38 MPH	54 F	Dry		1
[18:15-18:30]	99	33 MPH	54 F	Dry		3
[18:30-18:45]	78	38 MPH	52 F	Dry		1
[18:45-19:00]	77	37 MPH	52 F	Dry		4
[19:00-19:15]	65	37 MPH	52 F	Dry		1
[19:15-19:30]	39	41 MPH	52 F	Dry		5
[19:30-19:45]	35	39 MPH	50 F	Dry		0
[19:45-20:00]	37	38 MPH	50 F	Dry		0
[20:00-20:15]	40	39 MPH	50 F	Dry		0
[20:15-20:30]	33	38 MPH	48 F	Dry		8
[20:30-20:45]	32	41 MPH	48 F	Dry		5
[20:45-21:00]	27	40 MPH	48 F	Dry		5
[21:00-21:15]	25	41 MPH	48 F	Dry		0
[21:15-21:30]	23	38 MPH	46 F	Dry		7
[21:30-21:45]	48	37 MPH	46 F	Dry		0
[21:45-22:00]	25	42 MPH	46 F	Dry		0
[22:00-22:15]	16	42 MPH	44 F	Dry		6
[22:15-22:30]	17	43 MPH	44 F	Dry		0
[22:30-22:45]	6	44 MPH	44 F	Dry		0
[22:45-23:00]	11	41 MPH	44 F	Dry		0
[23:00-23:15]	13	40 MPH	44 F	Dry		0
[23:15-23:30]	9	38 MPH	44 F	Dry		0
[23:30-23:45]	9	42 MPH	44 F	Dry		0
[23:45-00:00]	7	46 MPH	42 F	Dry		0
	7462	39 MPH	49 F			

Appendix H

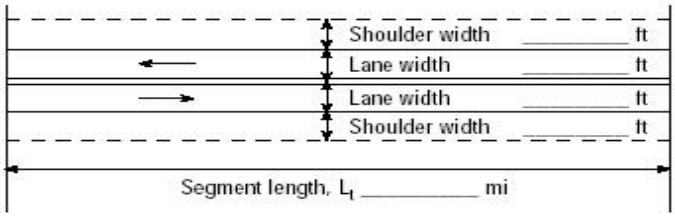
Traffic Operational Analysis

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway / Direction of Travel	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 1*
Date Performed	*3/30/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*PM*	Analysis Year	*Existing 2010*

Project Description: *Bannerman Road Corridor Study*

Input Data



Analysis direction vol., V_d *281*veh/h

Opposing direction vol., V_o *173*veh/h

☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.97*

No-passing zone *100%*

% Trucks and Buses , P_T *3 %*

% Recreational vehicles, P_R *0%*

Access points/ *mi* *9*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 20-9 or 20-15)	*1.9*	*2.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9 or 20-17)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.974*	*0.957*
Grade adjustment factor [1], f_G (Exhibit 20-7 or 20-13)	*0.93*	*0.71*
Directional flow rate[2], $v_i(pc/h)$ $v_i=V_i/(PHF*f_{HV}*f_G)$	*320*	*263*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field measured speed[3], S_{FM}	*mi/h*	Base free-flow speed[3], $BFFS_{FM}$	*50.0 mi/h*
Observed volume[3], V_f	veh/h	Adj. for lane width and shoulder width,[3] f_{LS}(Exh 20-5)	*3.0 mi/h*
Free-flow speed, FFS_d $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points[3], f_A (Exhibit 20-5)	*2.3 mi/h*
Adjustment for no-passing zones, f_{np} (Exhibit 20-19)	*3.6 mi/h*	Free-flow speed, FFS_d $(FSS=BFFS-f_{LS}-f_A)$	*44.8 mi/h*
		Average travel speed, $ATS=FFS-0.00776v_p-f_{np}$	*36.6 mi/h*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 20-10 or 20-16)	*1.5*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10 or 20-16)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*	*0.977*
Grade adjustment factor[1], f_G (Exhibit 20-8 or 20-14)	*0.94*	*0.77*
Directional flow rate[2], $v_i(pc/h)=V_i/(PHF*f_{HV}*f_G)$	*313*	*237*
Base percent time-spent-following[4], $BPTSF(\%)=100(1-e^{av_d^b})$	*32.5*	
Adj. for no-passing zone, f_{np} (Exhibit. 20-20)	*56.2*	
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{np}$	*64.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 or 20-4)	*C*
Volume to capacity ratio, $v/c=V_p/1{,}700$	*0.19*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)$=0.25L_t(V/PHF)$	*123*
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)$=V*L_t$	*478*
Peak 15-min total travel time, TT_{15}(veh-h)$=VMT_{15}/ATS$	*3.4*

Notes
1. If the highway is extended segment (level) or rolling terrain, fG=1.0 .
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only.
4. Exhibit 20-21 provides factors a and b.
5. Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade.

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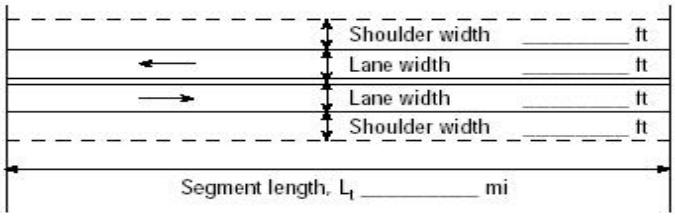
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway / Direction of Travel	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 2*
Date Performed	*3/30/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*PM*	Analysis Year	*Existing 2010*

Project Description: *Bannerman Road Corridor Study*

Input Data



Analysis direction vol., V_d *580*veh/h

Opposing direction vol., V_o *318*veh/h

☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.97*

No-passing zone *100%*

% Trucks and Buses , P_T *3 %*

% Recreational vehicles, P_R *0%*

Access points/ *mi* *7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 20-9 or 20-15)	*1.5*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9 or 20-17)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*	*0.974*
Grade adjustment factor [1], f_G (Exhibit 20-7 or 20-13)	*0.99*	*0.93*
Directional flow rate[2], $v_i(pc/h)$ $v_i=V_i/(PHF*f_{HV}*f_G)$	*613*	*362*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field measured speed[3], S_{FM}	*mi/h*	Base free-flow speed[3], $BFFS_{FM}$	*50.0 mi/h*
Observed volume[3], V_f	veh/h	Adj. for lane width and shoulder width,[3] f_{LS}(Exh 20-5)	*3.0 mi/h*
Free-flow speed, FFS_d $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points[3], f_A (Exhibit 20-5)	*1.8 mi/h*
Adjustment for no-passing zones, f_{np} (Exhibit 20-19)	*2.9 mi/h*	Free-flow speed, FFS_d $(FSS=BFFS-f_{LS}-f_A)$	*45.3 mi/h*
		Average travel speed, $ATS=FFS-0.00776v_p-f_{np}$	*34.7 mi/h*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 20-10 or 20-16)	*1.0*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10 or 20-16)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.985*
Grade adjustment factor[1], f_G (Exhibit 20-8 or 20-14)	*1.00*	*0.94*
Directional flow rate[2], $v_i(pc/h)=V_i/(PHF*f_{HV}*f_G)$	*598*	*354*
Base percent time-spent-following[4], $BPTSF(\%)=100(1-e^{av_d^b})$	*54.8*	
Adj. for no-passing zone, f_{np} (Exhibit. 20-20)	*36.1*	
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{np}$	*77.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 or 20-4)	*D*
Volume to capacity ratio, $v/c=V_p/1{,}700$	*0.36*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)$=0.25L_t(V/PHF)$	*164*
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)$=V*L_t$	*638*
Peak 15-min total travel time, TT_{15}(veh-h)$=VMT_{15}/ATS$	*4.7*

Notes

1. If the highway is extended segment (level) or rolling terrain, fG=1.0 .
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only.
4. Exhibit 20-21 provides factors a and b.
5. Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade.

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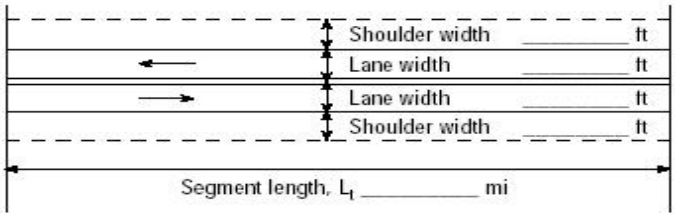
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway / Direction of Travel	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 3*
Date Performed	*3/30/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*PM*	Analysis Year	*Existing 2010*

Project Description: *Bannerman Road Corridor Study*

Input Data



Analysis direction vol., V_d *1144*veh/h

Opposing direction vol., V_o *516*veh/h

☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.95*

No-passing zone *100%*

% Trucks and Buses , P_T *3 %*

% Recreational vehicles, P_R *0%*

Access points/ *mi* *5*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 20-9 or 20-15)	*1.5*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9 or 20-17)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*	*0.974*
Grade adjustment factor [1], f_G (Exhibit 20-7 or 20-13)	*0.99*	*0.93*
Directional flow rate[2], $v_i(pc/h)$ $v_i=V_i/(PHF*f_{HV}*f_G)$	*1235*	*600*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field measured speed[3], S_{FM}	*39 mi/h*	Base free-flow speed[3], $BFFS_{FM}$	*mi/h*
Observed volume[3], V_f	*1100* veh/h	Adj. for lane width and shoulder width,[3] f_{LS}(Exh 20-5)	*mi/h*
Free-flow speed, FFS_d $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points[3], f_A (Exhibit 20-5)	*mi/h*
Adjustment for no-passing zones, f_{np} (Exhibit 20-19)	*1.9 mi/h*	Free-flow speed, FFS_d $(FSS=BFFS-f_{LS}-f_A)$	*47.7 mi/h*
		Average travel speed, $ATS=FFS-0.00776v_p-f_{np}$	*31.6 mi/h*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 20-10 or 20-16)	*1.0*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10 or 20-16)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.985*
Grade adjustment factor[1], f_G (Exhibit 20-8 or 20-14)	*1.00*	*0.94*
Directional flow rate[2], $v_i(pc/h)=V_i/(PHF*f_{HV}*f_G)$	*1204*	*586*
Base percent time-spent-following[4], $BPTSF(\%)=100(1-e^{av_d^b})$	*79.5*	
Adj. for no-passing zone, f_{np} (Exhibit. 20-20)	*18.3*	
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{np}$	*91.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 or 20-4)	*E*
Volume to capacity ratio, $v/c=V_p/1{,}700$	*0.73*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)$=0.25L_t(V/PHF)$	*512*
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)$=V*L_t$	*1945*
Peak 15-min total travel time, TT_{15}(veh-h)$=VMT_{15}/ATS$	*16.2*

Notes

1. If the highway is extended segment (level) or rolling terrain, fG=1.0 .
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only.
4. Exhibit 20-21 provides factors a and b.
5. Use alternative Equation 20-14 if some trucks operate at crawl speeds on a specific downgrade.

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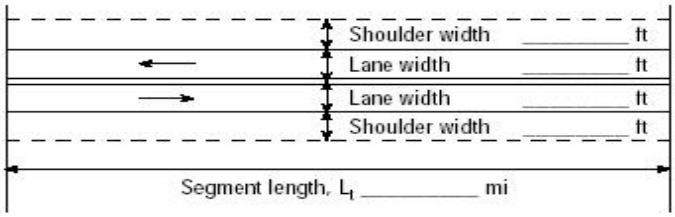
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 3*
Date Performed	*3/23/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*Design*	Analysis Year	*Future 2035*

Project Description: *Bannerman Road Corridor Study*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	*2448* veh/h
Directional split	*65 / 35*
Peak-hour factor, PHF	*0.95*
No-passing zone	*100*
% Trucks and Buses , P_T	*3* %
% Recreational vehicles, P_R	*0%*
Access points/ *mi*	*5*

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	*0.99*
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*2642*
v_p * highest directional split proportion[2] (pc/h)	*1717*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	*50.0 mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	*3.0 mi/h*
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	*1.3 mi/h*
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	*45.8 mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	*1.0*
Average travel speed, ATS (*mi/h*) $ATS=FFS-0.00776v_p-f_{np}$	*24.3*

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	*1.00*
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*2577*
v_p * highest directional split proportion[2] (pc/h)	*1675*
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	*89.6*
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	*3.2*
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	*92.9*

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	*F*
Volume to capacity ratio, $v/c=V_p/3{,}200$	*0.83*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= $0.25L_t(V/PHF)$	*1095*

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	*4162*
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	*45.1*
Notes	
1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.	

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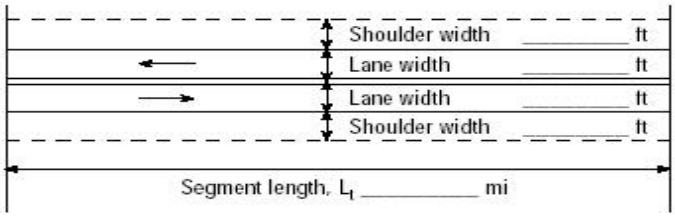
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 2*
Date Performed	*3/23/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*Design*	Analysis Year	*Future 2035*

Project Description: *Bannerman Road Corridor Study*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	*1287* veh/h
Directional split	*65 / 35*
Peak-hour factor, PHF	*0.97*
No-passing zone	*100*
% Trucks and Buses , P_T	*3 %*
% Recreational vehicles, P_R	*0%*
Access points/ *mi*	*7*

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	*0.99*
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*1360*
v_p * highest directional split proportion[2] (pc/h)	*884*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	*50.0 mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	*4.7 mi/h*
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	*1.8 mi/h*
		Free-flow speed, FFS ($FSS=BFFS-f_{LS}-f_A$)	*43.5 mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	*1.8*
Average travel speed, ATS (*mi/h*) $ATS=FFS-0.00776v_p-f_{np}$	*31.2*

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	*1.00*
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*1327*
v_p * highest directional split proportion[2] (pc/h)	*863*
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	*68.9*
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	*9.0*
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	*77.8*

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	*D*
Volume to capacity ratio, $v/c=V_p/3{,}200$	*0.43*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= $0.25L_t(V/PHF)$	*365*

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	*1416*
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	*11.7*
Notes	
1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.	

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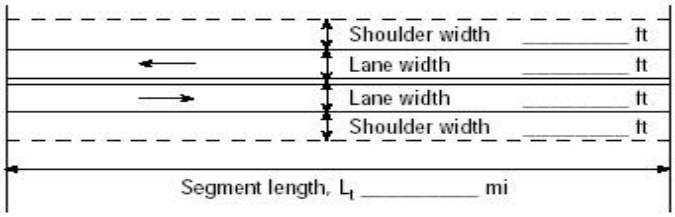
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*dd*	Highway	*Bannerman Road*
Agency or Company	*RSH*	From/To	*Segment 1*
Date Performed	*3/23/2011*	Jurisdiction	*Leon County*
Analysis Time Period	*Design*	Analysis Year	*Future 2035*

Project Description: *Bannerman Road Corridor Study*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	*593* veh/h
Directional split	*65 / 35*
Peak-hour factor, PHF	*0.97*
No-passing zone	*100*
% Trucks and Buses , P_T	*3 %*
% Recreational vehicles, P_R	*0%*
Access points/ *mi*	*9*

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	*0.93*
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	*1.1*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.974*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*675*
v_p * highest directional split proportion[2] (pc/h)	*439*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	*50.0 mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	*4.7 mi/h*
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	*2.3 mi/h*
		Free-flow speed, FFS ($FSS=BFFS-f_{LS}-f_A$)	*43.0 mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	*3.7*
Average travel speed, ATS (*mi/h*) $ATS=FFS-0.00776v_p-f_{np}$	*34.1*

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	*0.94*
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	*660*
v_p * highest directional split proportion[2] (pc/h)	*429*
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	*44.0*
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	*18.9*
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	*62.9*

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	*C*
Volume to capacity ratio, $v/c=V_p/3{,}200$	*0.21*
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= $0.25L_t(V/PHF)$	*260*

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	*1008*
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	*7.6*
Notes	
1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.	

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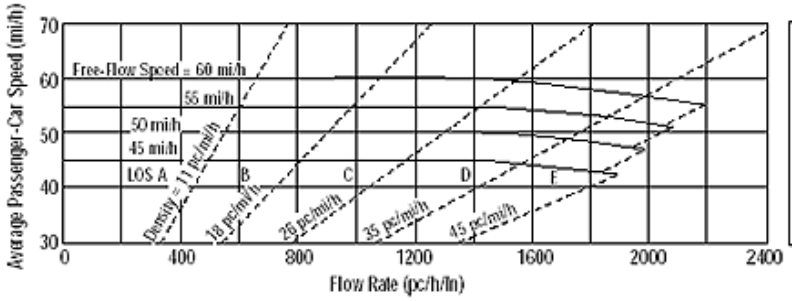
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	dd
Agency or Company	RSH
Date Performed	4/4/2011
Analysis Time Period	Design

Site Information

Highway/Direction to Travel	Bannerman Road
From/To	Segment 3
Jurisdiction	Leon County
Analysis Year	2035

Project Description Bannerman Road Corridor Study

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1592	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	3
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.957

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	5
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	50.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.3
f_M (mi/h)	0.0
FFS (mi/h)	48.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	875
Speed, S (mi/h)	48.8
D (pc/mi/ln)	17.9
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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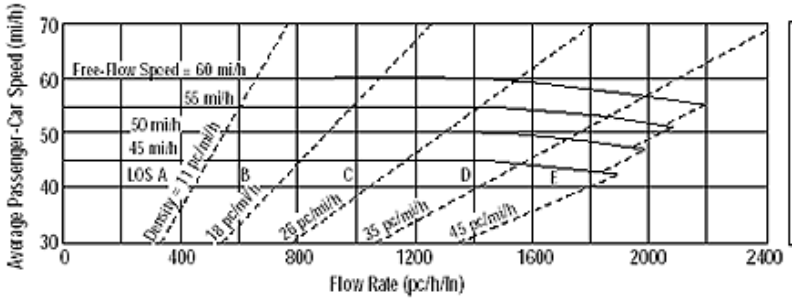
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	dd
Agency or Company	RSH
Date Performed	4/4/2011
Analysis Time Period	Design

Site Information

Highway/Direction to Travel	Bannerman Road
From/To	Segment 3
Jurisdiction	Leon County
Analysis Year	2035

Project Description Bannerman Road Corridor Study

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	856	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	3
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.957

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	5
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	50.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.3
f_M (mi/h)	0.0
FFS (mi/h)	48.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	470
Speed, S (mi/h)	48.8
D (pc/mi/ln)	9.6
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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Configuration Setup for 102:BANN-TVIL

Phase Function	Flags	Street Configuration	Flags	Miscellaneous	Flags
Permit	12345678	Exclusive	--------	Ext Permit 0	--------
Red Lock	12--56--	RR1 Clear	--------	Ext Permit 1	--------
Yellow Lock	--------	RR2 Clear	--------	Ext Permit 2	--------
Veh Min Call	-2---6--	RR2 Ltd Srv	--------	Exclu Ped	--------
Ped Recall	--------	Prot/Perm	--3---7-	PE Non-Lock	--------
Pedestrians	-2-4-6-8	Flash to PE	--------	Ped 2P Out	-2------
Rest in Walk	--------	Flash Entry	---4---8	Ped 6P Out	-----6--
Red Rest	--------	Disable Min Yel	--------	Ped 4P Out	---4----
Double Entry	-2-4-6-8	Disable Ovp Yel	--------	Ped 8P Out	--------8
Veh Max Call	--------	Ovp Flash Yel	--------	Flash Yellow	-2---6--
Soft Recall	--------	Em Veh A	-2--5----	Low Prl A	--------
Maximum 2	--------	Em Veh B	---4--7-	Low Prl B	--------
Cond Service	--------	Em Veh C	1-----6--	Low Prl C	--------
Max Cond Call	12345678	Em Veh D	--3-----8	Low Prl D	--------
Yellow Start	--------	Extra 1	1-3-5----	Restricted	--------
First Phases	-2---6--	IC Select	-2------	Extra 2	----5----
All Red Start	0.0	Long Failure	0.7	Red Revert	3.0
Transition Type	0.3	Short Failure	0.7	Disable Comm	0
Lag Hold Phases	--------	Flash Start	0	Cabinet Type	0

TOD Schedule for 102:BANN-TVIL

DAY 1 ≡ SUNDAY

62 ≡ FREE

	Hour	Minute	Day of the Week	Plan
0(0)	0	1	1234567X	62
1(1)	0	0	------X	0
2(2)	0	0	------X	0
3(3)	0	0	------X	0
4(4)	0	0	------X	0
5(5)	0	0	------X	0
6(6)	0	0	------X	0
7(7)	0	0	------X	0
8(8)	0	0	------X	0
9(9)	0	0	------X	0
10(A)	0	0	------X	0
11(B)	0	0	------X	0
12(C)	0	0	------X	0
13(D)	0	0	------X	0
14(E)	0	0	------X	0
15(F)	0	0	------X	0
16(10)	0	0	------X	0
17(11)	0	0	------X	0
18(12)	0	0	------X	0
19(13)	0	0	------X	0
20(14)	0	0	------X	0
21(15)	0	0	------X	0
22(16)	0	0	------X	0
23(17)	0	0	------X	0
24(18)	0	0	------X	0
25(19)	0	0	------X	0
26(1A)	0	0	------X	0
27(1B)	0	0	------X	0
28(1C)	0	0	------X	0
29(1D)	0	0	------X	0
30(1E)	0	0	------X	0
31(1F)	0	0	------X	0

Schedule TOD Functions for 102:BANN-TVIL

	Hour	Minute	Days of the Week	Function	Phase/Bits
0(0)	0	0	-23456-X	15	-------
1(1)	6	45	-23456-X	15	-2-4----
2(2)	8	45	-23456-X	15	-2------
3(3)	10	45	-23456-X	15	---4----
4(4)	13	45	-2345--X	15	-------
5(5)	14	0	-----6-X	15	--34----
6(6)	15	15	-2345--X	15	--34----
7(7)	19	15	-23456-X	15	--3-----
8(8)	22	0	-23456-X	15	-------
9(9)	9	45	1-----7X	15	---4----
10(A)	21	0	1------X	15	-------
11(B)	22	0	------7X	15	-------
12(C)	0	0	-------X	0	-------
13(D)	0	0	-------X	0	-------
14(E)	0	0	-------X	0	-------
15(F)	0	0	-------X	0	-------

2 ≡ phase Bank 2

3 ≡ phase Bank 3

4 ≡ MAX 2

Phase Bank 1 for 102:BANN-TVIL

Phase Bank 1	Phase 1 SBL	Phase 2 NBT	Phase 3 WBL	Phase 4 EBT	Phase 5 NBL	Phase 6 SBT	Phase 7 EBL	Phase 8 WBT
Walk	0	5	0	5	0	5	0	5
Don't Walk	0	21	0	28	0	25	0	31
Min Initial	4	15	6	10	4	15	6	10
Type 3 Limit	0	20	0	20	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Max Gap	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Min Gap	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Max Limit	12	35	13	33	15	32	10	36
Maximum 2	9	45	16	33	22	32	11	38
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	21	0	21	0	21	0	21
Cond Srv Min	12	15	0	10	12	15	0	10
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.5	3.7	3.7	3.5	4.5	3.7	3.7
Red Clear	2.5	2.5	3.3	3.3	2.5	2.5	3.3	3.3
Max Initial	0	20	0	20	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Bank 2 for 102:BANN-TVIL

Phase Bank 2	Phase 1 SBL	Phase 2 NBT	Phase 3 WBL	Phase 4 EBT	Phase 5 NBL	Phase 6 SBT	Phase 7 EBL	Phase 8 WBT
Walk	0	5	0	5	0	5	0	5
Don't Walk	0	21	0	28	0	25	0	31
Min Initial	4	15	6	10	4	15	6	10
Type 3 Limit	0	20	0	20	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	2.0	5.0	2.0	3.0	2.0	5.0	3.5	2.0
Max Gap	2.0	5.0	2.0	3.0	2.0	5.0	3.5	2.0
Min Gap	2.0	5.0	2.0	3.0	2.0	5.0	3.5	2.0
Max Limit	16	30	13	34	14	32	11	36
Maximum 2	26	45	16	46	16	55	25	37
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	21	0	21	0	21	0	21
Cond Srv Min	12	15	0	10	12	15	0	10
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.5	3.7	3.7	3.5	4.5	3.7	3.7
Red Clear	2.5	2.5	3.3	3.3	2.5	2.5	3.3	3.3
Max Initial	0	20	0	20	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Bank 3 for 102:BANN-TVIL

Phase Bank 3	Phase 1 SBL	Phase 2 NBT	Phase 3 WBL	Phase 4 EBT	Phase 5 NBL	Phase 6 SBT	Phase 7 EBL	Phase 8 WBT
Walk	0	5	0	5	0	5	0	5
Don't Walk	0	21	0	28	0	25	0	31
Min Initial	4	15	6	10	4	15	6	10
Type 3 Limit	0	20	0	20	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Max Gap	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Min Gap	2.0	5.0	2.0	2.0	2.0	5.0	3.0	2.0
Max Limit	15	32	13	33	17	30	10	36
Maximum 2	17	64	19	33	50	31	9	43
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	21	0	21	0	21	0	21
Cond Srv Min	12	15	0	10	12	15	0	10
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.5	3.7	3.7	3.5	4.5	3.7	3.7
Red Clear	2.5	2.5	3.3	3.3	2.5	2.5	3.3	3.3
Max Initial	0	20	0	20	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Configuration Setup for 291:BANN-TKTA

Phase Function	Flags	Street Configuration	Flags	Miscellaneous	Flags
Permit	1234-6-8	Exclusive	-------	Ext Permit 0	-------
Red Lock	-2---6--	RR1 Clear	-------	Ext Permit 1	-------
Yellow Lock	-------	RR2 Clear	-------	Ext Permit 2	-------
Veh Min Call	-2---6--	RR2 Ltd Srv	-------	Exclu Ped	-------
Ped Recall	-------	Prot/Perm	1-3-----	PE Non-Lock	-------
Pedestrians	-------	Flash to PE	-------	Ped 2P Out	-------
Rest in Walk	-------	Flash Entry	---4---8	Ped 6P Out	-------
Red Rest	-------	Disable Min Yel	-------	Ped 4P Out	-------
Double Entry	-23--6-8	Disable Ovp Yel	-------	Ped 8P Out	-------
Veh Max Call	-------	Ovp Flash Yel	-------	Flash Yellow	-2---6--
Soft Recall	-2---6--	Em Veh A	---4----	Low Prl A	-------
Maximum 2	-------	Em Veh B	1---6--	Low Prl B	-------
Cond Service	-------	Em Veh C	--3---8	Low Prl C	-------
Max Cond Call	1234-6-8	Em Veh D	-2------	Low Prl D	-------
Yellow Start	-------	Extra 1	1-3-5---	Restricted	-------
First Phases	-2---6--	IC Select	-2------	Extra 2	----5---
All Red Start	0.0	Long Failure	0.7	Red Revert	0.0
Transition Type	0.3	Short Failure	0.7	Disable Comm	0
Lag Hold Phases	-------	Flash Start	0	Cabinet Type	0

TOD Schedule for 291:BANN-TKTA

	Hour	Minute	Day of the Week	Plan
0(0)	5	30	-23456-X	62
1(1)	6	30	1----7X	62
2(2)	23	15	12345--X	63
3(3)	23	45	----67X	63
4(4)	0	1	1234567X	63
5(5)	0	0	-------X	0
6(6)	0	0	-------X	0
7(7)	0	0	-------X	0
8(8)	0	0	-------X	0
9(9)	0	0	-------X	0
10(A)	0	0	-------X	0
11(B)	0	0	-------X	0
12(C)	0	0	-------X	0
13(D)	0	0	-------X	0
14(E)	0	0	-------X	0
15(F)	0	0	-------X	0
16(10)	0	0	-------X	0
17(11)	0	0	-------X	0
18(12)	0	0	-------X	0
19(13)	0	0	-------X	0
20(14)	0	0	-------X	0
21(15)	0	0	-------X	0
22(16)	0	0	-------X	0
23(17)	0	0	-------X	0
24(18)	0	0	-------X	0
25(19)	0	0	-------X	0
26(1A)	0	0	-------X	0
27(1B)	0	0	-------X	0
28(1C)	0	0	-------X	0
29(1D)	0	0	-------X	0
30(1E)	0	0	-------X	0
31(1F)	0	0	-------X	0

63 = Flash

Schedule TOD Functions for 291:BANN-TKTA

	Hour	Minute	Days of the Week	Function	Phase/Bits
0(0)	6	45	-23456-X	11	-23--6-8
1(1)	8	30	-23456-X	11	-------
2(2)	9	0	1-----X	11	---4---
3(3)	12	45	1-----X	11	-------
4(4)	15	15	-23456-X	11	-2---6--
5(5)	18	30	-23456-X	11	-------
6(6)	0	0	------X	0	-------
7(7)	0	0	------X	0	-------
8(8)	0	0	------X	0	-------
9(9)	0	0	------X	0	-------
10(A)	0	0	------X	0	-------
11(B)	0	0	------X	0	-------
12(C)	0	0	------X	0	-------
13(D)	0	0	------X	0	-------
14(E)	0	0	------X	0	-------
15(F)	0	0	------X	0	-------

11 = MAX 2

Phase Bank 1 for 291:BANN-TKTA

Phase Bank 1	Phase 1 EBL	Phase 2 WBT	Phase 3 SBL	Phase 4 NBT	Phase 5	Phase 6 EBT	Phase 7	Phase 8 SBT
Walk	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0
Min Initial	4	12	4	4	0	12	0	4
Type 3 Limit	0	20	0	20	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	2.0	4.0	2.0	3.0	0.0	3.5	0.0	3.0
Max Gap	2.0	4.0	2.0	3.0	0.0	3.5	0.0	3.0
Min Gap	2.0	4.0	2.0	3.0	0.0	3.5	0.0	3.0
Max Limit	5	38	18	5	0	50	0	29
Maximum 2	7	63	63	15	0	75	0	74
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	0	0	0	0	0	0	0
Cond Srv Min	0	0	0	0	0	0	0	0
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.3	3.0	3.0	0.0	4.3	0.0	3.0
Red Clear	4.0	1.7	3.0	2.0	0.0	1.7	0.0	2.0
Max Initial	20	20	20	20	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Configuration Setup for 281:BANN-BULL

Phase Function	Flags	Street Configuration	Flags	Miscellaneous	Flags
Permit	12---6-8	Exclusive	-------	Ext Permit 0	-------
Red Lock	12---6--	RR1 Clear	-------	Ext Permit 1	-------
Yellow Lock	-------	RR2 Clear	-------	Ext Permit 2	-------
Veh Min Call	12---6--	RR2 Ltd Srv	-------	Exclu Ped	-------
Ped Recall	-------	Prot/Perm	1-------	PE Non-Lock	-------
Pedestrians	-------	Flash to PE	-------	Ped 2P Out	-------
Rest in Walk	-------	Flash Entry	-------8	Ped 6P Out	-----6--
Red Rest	-------	Disable Min Yel	-------	Ped 4P Out	---4----
Double Entry	-2---6--	Disable Ovp Yel	-------	Ped 8P Out	-------8
Veh Max Call	-------	Ovp Flash Yel	-------	Flash Yellow	-2---6--
Soft Recall	-2---6--	Em Veh A	-------	Low Prl A	-------
Maximum 2	-------	Em Veh B	1----6--	Low Prl B	-------
Cond Service	-------	Em Veh C	-------8	Low Prl C	-------
Max Cond Call	12---6-8	Em Veh D	-2------	Low Prl D	-------
Yellow Start	-------	Extra 1	1-3-5---	Restricted	-------
First Phases	-2---6--	IC Select	-2------	Extra 2	----5---
All Red Start	0.0	Long Failure	0.7	Red Revert	0.0
Transition Type	0.3	Short Failure	0.7	Disable Comm	0
Lag Hold Phases	-------	Flash Start	0	Cabinet Type	0

TOD Schedule for 281:BANN-BULL

	Hour	Minute	Day of the Week	Plan
0(0)	5	30	-23456-X	62
1(1)	6	30	1----7X	62
2(2)	23	0	12345--X	63
3(3)	23	45	----67X	63
4(4)	0	1	1234567X	63
5(5)	0	0	------X	0
6(6)	0	0	------X	0
7(7)	0	0	------X	0
8(8)	0	0	------X	0
9(9)	0	0	------X	0
10(A)	0	0	------X	0
11(B)	0	0	------X	0
12(C)	0	0	------X	0
13(D)	0	0	------X	0
14(E)	0	0	------X	0
15(F)	0	0	------X	0
16(10)	0	0	------X	0
17(11)	0	0	------X	0
18(12)	0	0	------X	0
19(13)	0	0	------X	0
20(14)	0	0	------X	0
21(15)	0	0	------X	0
22(16)	0	0	------X	0
23(17)	0	0	------X	0
24(18)	0	0	------X	0
25(19)	0	0	------X	0
26(1A)	0	0	------X	0
27(1B)	0	0	------X	0
28(1C)	0	0	------X	0
29(1D)	0	0	------X	0
30(1E)	0	0	------X	0
31(1F)	0	0	------X	0

Schedule TOD Functions for 281:BANN-BULL

	Hour	Minute	Days of the Week	Function	Phase/Bits
0(0)	6	15	-23456-X	11	------8
1(1)	9	15	-23456-X	11	--------
2(2)	15	15	-23456-X	11	12---6--
3(3)	19	0	-23456-X	11	--------
4(4)	0	0	-------X	0	--------
5(5)	0	0	-------X	0	--------
6(6)	0	0	-------X	0	--------
7(7)	0	0	-------X	0	--------
8(8)	0	0	-------X	0	--------
9(9)	0	0	-------X	0	--------
10(A)	0	0	-------X	0	--------
11(B)	0	0	-------X	0	--------
12(C)	0	0	-------X	0	--------
13(D)	0	0	-------X	0	--------
14(E)	0	0	-------X	0	--------
15(F)	0	0	-------X	0	--------

Phase Bank 1 for 281:BANN-BULL

Phase Bank 1	Phase 1 EBL	Phase 2 WBT	Phase 3	Phase 4	Phase 5	Phase 6 EBT	Phase 7	Phase 8 SBT
Walk	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0
Min Initial	6	12	0	0	0	12	0	8
Type 3 Limit	0	20	0	0	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	2.0	4.0	0.0	0.0	0.0	4.0	0.0	2.5
Max Gap	2.0	4.0	0.0	0.0	0.0	4.0	0.0	2.5
Min Gap	2.0	4.0	0.0	0.0	0.0	4.0	0.0	2.5
Max Limit	10	30	0	0	0	45	0	23
Maximum 2	10	50	0	0	0	65	0	63
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	7	0	0	0	7	0	7
Cond Srv Min	0	0	0	0	0	0	0	0
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	0.0	0.0	4.0	0.0	3.5
Red Clear	2.0	2.0	0.0	0.0	0.0	2.0	0.0	2.5
Max Initial	0	20	0	0	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Configuration Setup for 346:BANN-MRDN

Phase Function	Flags	Street Configuration	Flags	Miscellaneous	Flags
Permit	12---6-8	Exclusive	-------	Ext Permit 0	-------
Red Lock	-2---6---	RR1 Clear	-------	Ext Permit 1	-------
Yellow Lock	-------	RR2 Clear	-------	Ext Permit 2	-------
Veh Min Call	-2---6---	RR2 Ltd Srv	-------	Exclu Ped	-------
Ped Recall	-------	Prot/Perm	1-------	PE Non-Lock	-------
Pedestrians	-2-----8	Flash to PE	-------	Ped 2P Out	-------
Rest in Walk	-------	Flash Entry	-------8	Ped 6P Out	-------
Red Rest	-------	Disable Min Yel	-------	Ped 4P Out	-------
Double Entry	-2---6---	Disable Ovp Yel	-------	Ped 8P Out	-------
Veh Max Call	-------	Ovp Flash Yel	-------	Flash Yellow	-2---6---
Soft Recall	-------	Em Veh A	-2------	Low Prl A	-------
Maximum 2	-------	Em Veh B	-------	Low Prl B	-------
Cond Service	-------	Em Veh C	1---6---	Low Prl C	-------
Max Cond Call	12---6-8	Em Veh D	-------8	Low Prl D	-------
Yellow Start	-------	Extra 1	1-3-5----	Restricted	-------
First Phases	-2---6---	IC Select	-2------	Extra 2	-----5---
All Red Start	0.0	Long Failure	0.7	Red Revert	5.0
Transition Type	0.3	Short Failure	0.7	Disable Comm	0
Lag Hold Phases	-------	Flash Start	0	Cabinet Type	0

TOD Schedule for 346:BANN-MRDN

	Hour	Minute	Day of the Week	Plan
0(0)	1	0	1234567X	62
1(1)	6	15	-23456-X	62
2(2)	7	0	1-----7X	62
3(3)	0	0	-------X	0
4(4)	0	0	-------X	0
5(5)	0	0	-------X	0
6(6)	0	0	-------X	0
7(7)	0	0	-------X	0
8(8)	0	0	-------X	0
9(9)	0	0	-------X	0
10(A)	0	0	-------X	0
11(B)	0	0	-------X	0
12(C)	0	0	-------X	0
13(D)	0	0	-------X	0
14(E)	0	0	-------X	0
15(F)	0	0	-------X	0
16(10)	0	0	-------X	0
17(11)	0	0	-------X	0
18(12)	0	0	-------X	0
19(13)	0	0	-------X	0
20(14)	0	0	-------X	0
21(15)	0	0	-------X	0
22(16)	0	0	-------X	0
23(17)	0	0	-------X	0
24(18)	0	0	-------X	0
25(19)	0	0	-------X	0
26(1A)	0	0	-------X	0
27(1B)	0	0	-------X	0
28(1C)	0	0	-------X	0
29(1D)	0	0	-------X	0
30(1E)	0	0	-------X	0
31(1F)	0	0	-------X	0

Schedule TOD Functions for 346:BANN-MRDN

	Hour	Minute	Days of the Week	Function	Phase/Bits
0(0)	7	0	-23456-X	11	12---6-8
1(1)	8	45	-23456-X	11	-------
2(2)	11	15	-23456-X	11	------8
3(3)	14	45	-23456-X	11	-------
4(4)	16	0	-23456-X	11	12---6--
5(5)	18	45	-23456-X	11	-------
6(6)	0	0	------X	0	-------
7(7)	0	0	------X	0	-------
8(8)	0	0	------X	0	-------
9(9)	0	0	------X	0	-------
10(A)	0	0	------X	0	-------
11(B)	0	0	------X	0	-------
12(C)	0	0	------X	0	-------
13(D)	0	0	------X	0	-------
14(E)	0	0	------X	0	-------
15(F)	0	0	------X	0	-------

Phase Bank 1 for 346:BANN-MRDN

Phase Bank 1	Phase 1 SBL	Phase 2 NBT	Phase 3	Phase 4	Phase 5	Phase 6 SBT	Phase 7	Phase 8 WBT
Walk	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0
Min Initial	5	15	0	0	0	15	0	7
Type 3 Limit	0	20	0	0	0	20	0	20
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veh Ext	3.0	5.0	0.0	0.0	0.0	5.0	0.0	3.0
Max Gap	3.0	5.0	0.0	0.0	0.0	5.0	0.0	3.0
Min Gap	3.0	5.0	0.0	0.0	0.0	5.0	0.0	3.0
Max Limit	9	30	0	0	0	45	0	23
Maximum 2	17	52	0	0	0	75	0	33
Adv/Dly Walk	0	0	0	0	0	0	0	0
Min Ped Clear	0	7	0	0	0	0	0	7
Cond Srv Min	10	10	0	0	0	10	0	10
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	0.0	4.0	4.0	0.0	3.0
Red Clear	3.0	2.0	0.0	0.0	2.0	2.0	0.0	3.0
Max Initial	0	20	0	20	0	20	0	20
Alt Walk	0	0	0	0	0	0	0	0
Alt Flash D/W	0	0	0	0	0	0	0	0
Alt Initial	0	0	0	0	0	0	0	0
Alt Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

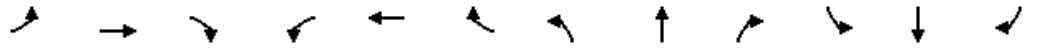
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	107	66	324	172	286	117	847	1170	114	99	608	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	0.88	1.00	0.95		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	1770	3385		3433	5018		1770	5026	
Flt Permitted	0.50	1.00	1.00	0.95	1.00		0.95	1.00		0.16	1.00	
Satd. Flow (perm)	940	1863	2787	1770	3385		3433	5018		298	5026	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	115	71	348	181	301	123	892	1232	120	104	640	54
RTOR Reduction (vph)	0	0	269	0	39	0	0	10	0	0	8	0
Lane Group Flow (vph)	115	71	79	181	385	0	892	1342	0	104	686	0
Turn Type	custom		Perm	Prot			Prot			custom		
Protected Phases	1!	6!		5!	2		7!	4!			8!	
Permitted Phases	4!		6							1!		
Actuated Green, G (s)	77.0	25.6	25.6	14.4	16.0		28.0	52.0		25.0	18.0	
Effective Green, g (s)	77.0	25.6	25.6	14.4	16.0		28.0	52.0		25.0	18.0	
Actuated g/C Ratio	0.68	0.23	0.23	0.13	0.14		0.25	0.46		0.22	0.16	
Clearance Time (s)	6.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	2.0		2.0	2.0		2.0	5.0	
Lane Grp Cap (vph)	824	422	631	226	479		851	2309		66	801	
v/s Ratio Prot	0.03	0.04		0.10	c0.11		c0.26	0.27			c0.14	
v/s Ratio Perm	0.06		0.03							c0.35		
v/c Ratio	0.14	0.17	0.12	0.80	0.80		1.05	0.58		1.58	0.86	
Uniform Delay, d1	6.5	35.1	34.8	47.9	47.0		42.5	22.5		44.0	46.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9	0.4	17.2	13.3		44.2	1.1		319.6	11.4	
Delay (s)	6.9	36.0	35.2	65.1	60.3		86.7	23.5		363.6	57.6	
Level of Service	A	D	D	E	E		F	C		F	E	
Approach Delay (s)		29.2			61.7			48.7			97.5	
Approach LOS		C			E			D			F	

Intersection Summary			
HCM Average Control Delay	57.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

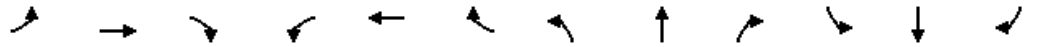
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	66	95	991	154	67	28	168	412	55	62	995	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	0.88	1.00	0.95		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	1770	3382		3433	4995		1770	5077	
Flt Permitted	0.69	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1282	1863	2787	1770	3382		3433	4995		1770	5077	
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	76	109	1139	164	71	30	179	438	59	66	1059	12
RTOR Reduction (vph)	0	0	803	0	23	0	0	16	0	0	1	0
Lane Group Flow (vph)	76	109	336	164	78	0	179	481	0	66	1070	0
Turn Type	custom		custom	Prot			Prot			Prot		
Protected Phases	7			3	8		5	2		1	6	
Permitted Phases	4	4	6									
Actuated Green, G (s)	24.5	16.0	28.0	16.0	23.5		8.0	28.1		7.9	28.0	
Effective Green, g (s)	24.5	16.0	28.0	16.0	23.5		8.0	28.1		7.9	28.0	
Actuated g/C Ratio	0.26	0.17	0.29	0.17	0.25		0.08	0.30		0.08	0.29	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Vehicle Extension (s)	3.5	3.0	5.0	2.0	2.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	374	314	821	298	837		289	1477		147	1496	
v/s Ratio Prot	0.02			c0.09	0.02		c0.05	0.10		0.04	c0.21	
v/s Ratio Perm	0.03	c0.06	0.12									
v/c Ratio	0.20	0.35	0.41	0.55	0.09		0.62	0.33		0.45	0.71	
Uniform Delay, d1	27.3	34.9	26.9	36.2	27.5		42.0	26.1		41.5	29.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	3.0	1.5	7.1	0.2		9.6	0.6		0.8	3.0	
Delay (s)	27.7	37.9	28.4	43.3	27.8		51.6	26.7		42.3	32.9	
Level of Service	C	D	C	D	C		D	C		D	C	
Approach Delay (s)		29.1			37.4			33.3			33.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	276	0	0	555	431	0	0	0	227	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0			6.0						5.0	6.0
Lane Util. Factor	1.00	1.00			1.00						1.00	1.00
Frt	1.00	1.00			0.94						1.00	0.85
Flt Protected	0.95	1.00			1.00						0.95	1.00
Satd. Flow (prot)	1770	1863			1753						1770	1583
Flt Permitted	0.06	1.00			1.00						0.95	1.00
Satd. Flow (perm)	118	1863			1753						1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	56	288	0	0	578	449	0	0	0	267	0	47
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	0	0	0	16
Lane Group Flow (vph)	56	288	0	0	999	0	0	0	0	0	267	31
Turn Type	pm+pt						Perm			Prot		custom
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6						4					6
Actuated Green, G (s)	67.0	67.0			56.0						22.0	67.0
Effective Green, g (s)	67.0	67.0			56.0						22.0	67.0
Actuated g/C Ratio	0.67	0.67			0.56						0.22	0.67
Clearance Time (s)	7.0	6.0			6.0						5.0	6.0
Vehicle Extension (s)	2.0	3.5			4.0						3.0	3.5
Lane Grp Cap (vph)	145	1248			982						389	1061
v/s Ratio Prot	0.02	c0.15			c0.57						c0.14	
v/s Ratio Perm	0.24										0.01	0.02
v/c Ratio	0.39	0.23			1.02						0.69	0.03
Uniform Delay, d1	23.6	6.4			22.0						35.8	5.6
Progression Factor	1.00	1.00			1.00						1.00	1.00
Incremental Delay, d2	0.6	0.1			33.1						4.0	0.0
Delay (s)	24.2	6.6			55.1						39.8	5.6
Level of Service	C	A			E						D	A
Approach Delay (s)		9.4			55.1			0.0			34.7	
Approach LOS		A			E			A			C	

Intersection Summary			
HCM Average Control Delay	42.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	453	0	0	114	80	0	0	0	459	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0			6.0						5.0	6.0
Lane Util. Factor	1.00	1.00			1.00						1.00	1.00
Frt	1.00	1.00			0.94						1.00	0.85
Flt Protected	0.95	1.00			1.00						0.95	1.00
Satd. Flow (prot)	1770	1863			1759						1770	1583
Flt Permitted	0.43	1.00			1.00						0.40	1.00
Satd. Flow (perm)	803	1863			1759						745	1583
Peak-hour factor, PHF	0.78	0.78	0.78	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	17	581	0	0	125	88	0	0	0	504	0	24
RTOR Reduction (vph)	0	0	0	0	39	0	0	0	0	0	0	14
Lane Group Flow (vph)	17	581	0	0	174	0	0	0	0	0	504	10
Turn Type	pm+pt						Perm			Prot		custom
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6						4					6
Actuated Green, G (s)	28.0	28.0			17.0						26.0	28.0
Effective Green, g (s)	28.0	28.0			17.0						26.0	28.0
Actuated g/C Ratio	0.43	0.43			0.26						0.40	0.43
Clearance Time (s)	7.0	6.0			6.0						5.0	6.0
Vehicle Extension (s)	2.0	3.5			4.0						3.0	3.5
Lane Grp Cap (vph)	405	803			460						550	682
v/s Ratio Prot	0.00	c0.31			0.10						c0.23	
v/s Ratio Perm	0.02										c0.14	0.01
v/c Ratio	0.04	0.72			0.38						0.92	0.02
Uniform Delay, d1	11.1	15.3			19.7						18.5	10.6
Progression Factor	1.00	1.00			1.00						1.00	1.00
Incremental Delay, d2	0.0	5.6			2.4						22.5	0.0
Delay (s)	11.1	20.9			22.0						40.9	10.6
Level of Service	B	C			C						D	B
Approach Delay (s)		20.6			22.0			0.0			39.6	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	118	60	156	231	50	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.95		0.92		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1721		1713		1770	1863
Flt Permitted	0.97		1.00		0.41	1.00
Satd. Flow (perm)	1721		1713		762	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	65	170	251	54	51
RTOR Reduction (vph)	39	0	133	0	0	0
Lane Group Flow (vph)	154	0	288	0	54	51
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		16.0		16.0	16.0
Effective Green, g (s)	16.0		16.0		16.0	16.0
Actuated g/C Ratio	0.40		0.40		0.40	0.40
Clearance Time (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	688		685		305	745
v/s Ratio Prot	c0.09		c0.17			0.03
v/s Ratio Perm					0.07	
v/c Ratio	0.22		0.42		0.18	0.07
Uniform Delay, d1	7.9		8.7		7.7	7.4
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.8		1.9		1.3	0.2
Delay (s)	8.7		10.6		9.0	7.6
Level of Service	A		B		A	A
Approach Delay (s)	8.7		10.6			8.3
Approach LOS	A		B			A

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	294	49	32	69	57	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.98		0.91		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1752		1691		1770	1863
Flt Permitted	0.96		1.00		0.69	1.00
Satd. Flow (perm)	1752		1691		1278	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	53	35	75	62	164
RTOR Reduction (vph)	15	0	45	0	0	0
Lane Group Flow (vph)	358	0	65	0	62	164
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		16.0		16.0	16.0
Effective Green, g (s)	16.0		16.0		16.0	16.0
Actuated g/C Ratio	0.40		0.40		0.40	0.40
Clearance Time (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	701		676		511	745
v/s Ratio Prot	c0.20		0.04			c0.09
v/s Ratio Perm					0.05	
v/c Ratio	0.51		0.10		0.12	0.22
Uniform Delay, d1	9.0		7.5		7.6	7.9
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.6		0.3		0.5	0.7
Delay (s)	11.7		7.8		8.1	8.6
Level of Service	B		A		A	A
Approach Delay (s)	11.7		7.8			8.4
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	162	236	265	293	100	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	
Frt		1.00	1.00	0.85	0.94	
Flt Protected		0.98	1.00	1.00	0.97	
Satd. Flow (prot)		1826	1863	1583	1699	
Flt Permitted		0.59	1.00	1.00	0.97	
Satd. Flow (perm)		1103	1863	1583	1699	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	257	288	318	109	97
RTOR Reduction (vph)	0	0	0	210	64	0
Lane Group Flow (vph)	0	433	288	108	142	0
Turn Type	pm+pt			Perm		
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		25.0	17.0	17.0	17.0	
Effective Green, g (s)		25.0	17.0	17.0	17.0	
Actuated g/C Ratio		0.50	0.34	0.34	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)		609	633	538	578	
v/s Ratio Prot		c0.06	0.15		c0.08	
v/s Ratio Perm		c0.30		0.07		
v/c Ratio		0.71	0.45	0.20	0.25	
Uniform Delay, d1		9.7	12.9	11.7	11.9	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		6.9	2.4	0.8	1.0	
Delay (s)		16.6	15.2	12.5	12.9	
Level of Service		B	B	B	B	
Approach Delay (s)		16.6	13.8		12.9	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	68	231	174	57	238	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	
Frt		1.00	1.00	0.85	0.94	
Flt Protected		0.99	1.00	1.00	0.97	
Satd. Flow (prot)		1842	1863	1583	1704	
Flt Permitted		0.91	1.00	1.00	0.97	
Satd. Flow (perm)		1688	1863	1583	1704	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	251	189	62	259	207
RTOR Reduction (vph)	0	0	0	42	58	0
Lane Group Flow (vph)	0	325	189	20	408	0
Turn Type	pm+pt			Perm		
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		24.0	16.0	16.0	18.0	
Effective Green, g (s)		24.0	16.0	16.0	18.0	
Actuated g/C Ratio		0.48	0.32	0.32	0.36	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)		823	596	507	613	
v/s Ratio Prot		c0.03	0.10		c0.24	
v/s Ratio Perm		c0.16		0.01		
v/c Ratio		0.39	0.32	0.04	0.67	
Uniform Delay, d1		8.3	12.9	11.7	13.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.4	1.4	0.1	5.6	
Delay (s)		9.8	14.3	11.9	19.1	
Level of Service		A	B	B	B	
Approach Delay (s)		9.8	13.7		19.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

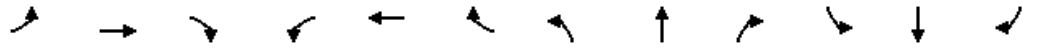
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	185	111	559	214	384	146	1138	1451	142	123	755	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	0.88	1.00	0.95		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	1770	3393		3433	5017		1770	5020	
Flt Permitted	0.33	1.00	1.00	0.95	1.00		0.95	1.00		0.25	1.00	
Satd. Flow (perm)	621	1863	2787	1770	3393		3433	5017		466	5020	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	199	119	601	225	404	154	1198	1527	149	129	795	74
RTOR Reduction (vph)	0	0	494	0	29	0	0	9	0	0	8	0
Lane Group Flow (vph)	199	119	107	225	529	0	1198	1667	0	129	861	0
Turn Type	custom		custom	Prot			Prot			custom		
Protected Phases	7			3	8		5	2			6	
Permitted Phases	4	4	6							1		
Actuated Green, G (s)	25.0	12.0	24.0	24.0	23.0		48.0	56.0		16.0	24.0	
Effective Green, g (s)	25.0	12.0	24.0	24.0	23.0		48.0	56.0		16.0	24.0	
Actuated g/C Ratio	0.19	0.09	0.18	0.18	0.17		0.36	0.41		0.12	0.18	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Lane Grp Cap (vph)	226	166	495	315	578		1221	2081		55	892	
v/s Ratio Prot	0.08			c0.13	c0.16		c0.35	0.33			c0.17	
v/s Ratio Perm	0.08	0.06	0.04							c0.28		
v/c Ratio	0.88	0.72	0.22	0.71	0.92		0.98	0.80		2.35	0.96	
Uniform Delay, d1	50.9	59.8	47.5	52.3	55.0		43.1	34.6		59.5	55.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.4	23.2	1.0	13.0	21.5		21.6	3.4		658.0	22.8	
Delay (s)	86.3	83.1	48.5	65.2	76.5		64.7	38.0		717.5	77.8	
Level of Service	F	F	D	E	E		E	D		F	E	
Approach Delay (s)		61.1			73.3			49.1			160.5	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM Average Control Delay	74.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	89	131	1372	190	100	36	252	511	68	76	1235	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	0.88	1.00	0.95		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	1770	3399		3433	4996		1770	5075	
Flt Permitted	0.66	1.00	1.00	0.95	1.00		0.95	1.00		0.20	1.00	
Satd. Flow (perm)	1231	1863	2787	1770	3399		3433	4996		373	5075	
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	102	151	1577	202	106	38	268	544	72	81	1314	18
RTOR Reduction (vph)	0	0	938	0	29	0	0	17	0	0	1	0
Lane Group Flow (vph)	102	151	639	202	115	0	268	599	0	81	1331	0
Turn Type	custom		custom	Prot			Prot			custom		
Protected Phases	7			3	8		5	2			6	
Permitted Phases	4	4	6							1		
Actuated Green, G (s)	27.0	18.0	28.0	14.0	23.0		8.0	16.0		20.0	28.0	
Effective Green, g (s)	27.0	18.0	28.0	14.0	23.0		8.0	16.0		20.0	28.0	
Actuated g/C Ratio	0.28	0.19	0.29	0.15	0.24		0.08	0.17		0.21	0.29	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.0	7.0		6.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	401	353	821	261	823		289	841		79	1496	
v/s Ratio Prot	0.02			c0.11	c0.03		0.08	0.12			c0.26	
v/s Ratio Perm	0.05	c0.08	0.23							c0.22		
v/c Ratio	0.25	0.43	0.78	0.77	0.14		0.93	0.71		1.03	0.89	
Uniform Delay, d1	25.8	34.0	30.7	39.0	28.2		43.2	37.3		37.5	32.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	3.8	7.2	19.8	0.4		37.2	5.1		108.4	8.3	
Delay (s)	26.2	37.7	37.8	58.7	28.6		80.4	42.4		145.9	40.3	
Level of Service	C	D	D	E	C		F	D		F	D	
Approach Delay (s)		37.2			46.2			53.9			46.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	44.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	376	0	0	671	522	0	0	0	263	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0						5.0	6.0
Lane Util. Factor	1.00	1.00			1.00						1.00	1.00
Frt	1.00	1.00			0.94						1.00	0.85
Flt Protected	0.95	1.00			1.00						0.95	1.00
Satd. Flow (prot)	1770	1863			1753						1770	1583
Flt Permitted	0.04	1.00			1.00						0.95	1.00
Satd. Flow (perm)	77	1863			1753						1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	77	392	0	0	699	544	0	0	0	309	0	55
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	0	18
Lane Group Flow (vph)	77	392	0	0	1224	0	0	0	0	0	309	37
Turn Type	pm+pt						Perm			Prot		custom
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6						4					6
Actuated Green, G (s)	101.0	101.0			93.0						38.0	101.0
Effective Green, g (s)	101.0	101.0			93.0						38.0	101.0
Actuated g/C Ratio	0.67	0.67			0.62						0.25	0.67
Clearance Time (s)	4.0	6.0			6.0						5.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Lane Grp Cap (vph)	97	1254			1087						448	1066
v/s Ratio Prot	c0.02	0.21			c0.70						c0.17	
v/s Ratio Perm	0.51										0.00	0.02
v/c Ratio	0.79	0.31			1.13						0.69	0.03
Uniform Delay, d1	38.5	10.1			28.5						50.7	8.2
Progression Factor	1.00	1.00			1.00						1.00	1.00
Incremental Delay, d2	34.6	0.7			69.0						4.4	0.1
Delay (s)	73.2	10.8			97.5						55.1	8.3
Level of Service	E	B			F						E	A
Approach Delay (s)		21.0			97.5			0.0			48.0	
Approach LOS		C			F			A			D	

Intersection Summary			
HCM Average Control Delay	71.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	813	0	0	162	112	0	0	0	592	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.0			6.0						5.0	6.0
Lane Util. Factor	1.00	1.00			1.00						1.00	1.00
Frt	1.00	1.00			0.94						1.00	0.85
Flt Protected	0.95	1.00			1.00						0.95	1.00
Satd. Flow (prot)	1770	1863			1760						1770	1583
Flt Permitted	0.42	1.00			1.00						0.95	1.00
Satd. Flow (perm)	781	1863			1760						1770	1583
Peak-hour factor, PHF	0.78	0.78	0.78	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	31	1042	0	0	178	123	0	0	0	651	0	32
RTOR Reduction (vph)	0	0	0	0	31	0	0	0	0	0	0	15
Lane Group Flow (vph)	31	1042	0	0	270	0	0	0	0	0	651	17
Turn Type	pm+pt						Perm			Prot		custom
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6						4					6
Actuated Green, G (s)	43.0	43.0			32.0						26.0	43.0
Effective Green, g (s)	43.0	43.0			32.0						26.0	43.0
Actuated g/C Ratio	0.54	0.54			0.40						0.32	0.54
Clearance Time (s)	7.0	6.0			6.0						5.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Lane Grp Cap (vph)	469	1001			704						575	851
v/s Ratio Prot	0.00	c0.56			0.15						c0.35	
v/s Ratio Perm	0.03										0.01	0.01
v/c Ratio	0.07	1.04			0.38						1.13	0.02
Uniform Delay, d1	9.4	18.5			17.0						27.0	8.7
Progression Factor	1.00	1.00			1.00						1.00	1.00
Incremental Delay, d2	0.1	39.7			1.6						79.5	0.0
Delay (s)	9.5	58.2			18.6						106.5	8.7
Level of Service	A	E			B						F	A
Approach Delay (s)		56.8			18.6			0.0			101.9	
Approach LOS		E			B			A			F	

Intersection Summary			
HCM Average Control Delay	66.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	138	69	210	311	78	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.96		0.92		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1722		1713		1770	1863
Flt Permitted	0.97		1.00		0.25	1.00
Satd. Flow (perm)	1722		1713		473	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	75	228	338	85	82
RTOR Reduction (vph)	45	0	133	0	0	0
Lane Group Flow (vph)	180	0	433	0	85	82
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		16.0		16.0	16.0
Effective Green, g (s)	16.0		16.0		16.0	16.0
Actuated g/C Ratio	0.40		0.40		0.40	0.40
Clearance Time (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	689		685		189	745
v/s Ratio Prot	c0.10		c0.25			0.04
v/s Ratio Perm					0.18	
v/c Ratio	0.26		0.63		0.45	0.11
Uniform Delay, d1	8.0		9.6		8.8	7.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.9		4.4		7.6	0.3
Delay (s)	9.0		14.0		16.3	7.8
Level of Service	A		B		B	A
Approach Delay (s)	9.0		14.0			12.2
Approach LOS	A		B			B

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	331	55	25	54	74	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.98		0.91		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1752		1690		1770	1863
Flt Permitted	0.96		1.00		0.70	1.00
Satd. Flow (perm)	1752		1690		1306	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	60	27	59	80	212
RTOR Reduction (vph)	15	0	35	0	0	0
Lane Group Flow (vph)	405	0	51	0	80	212
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		16.0		16.0	16.0
Effective Green, g (s)	16.0		16.0		16.0	16.0
Actuated g/C Ratio	0.40		0.40		0.40	0.40
Clearance Time (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	701		676		522	745
v/s Ratio Prot	c0.23		0.03			c0.11
v/s Ratio Perm					0.06	
v/c Ratio	0.58		0.07		0.15	0.28
Uniform Delay, d1	9.4		7.4		7.7	8.1
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.5		0.2		0.6	1.0
Delay (s)	12.8		7.6		8.3	9.1
Level of Service	B		A		A	A
Approach Delay (s)	12.8		7.6			8.9
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	209	304	398	440	121	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	
Frt		1.00	1.00	0.85	0.94	
Flt Protected		0.98	1.00	1.00	0.97	
Satd. Flow (prot)		1826	1863	1583	1700	
Flt Permitted		0.49	1.00	1.00	0.97	
Satd. Flow (perm)		921	1863	1583	1700	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	330	433	478	132	116
RTOR Reduction (vph)	0	0	0	255	53	0
Lane Group Flow (vph)	0	557	433	223	195	0
Turn Type	pm+pt			Perm		
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		36.0	28.0	28.0	16.0	
Effective Green, g (s)		36.0	28.0	28.0	16.0	
Actuated g/C Ratio		0.60	0.47	0.47	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)		613	869	739	453	
v/s Ratio Prot		c0.06	0.23		c0.11	
v/s Ratio Perm		c0.48		0.14		
v/c Ratio		0.91	0.50	0.30	0.43	
Uniform Delay, d1		10.6	11.1	9.9	18.2	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		19.7	2.0	1.0	3.0	
Delay (s)		30.3	13.2	11.0	21.2	
Level of Service		C	B	B	C	
Approach Delay (s)		30.3	12.0		21.2	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	88	298	338	112	341	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	
Frt		1.00	1.00	0.85	0.94	
Flt Protected		0.99	1.00	1.00	0.97	
Satd. Flow (prot)		1842	1863	1583	1704	
Flt Permitted		0.61	1.00	1.00	0.97	
Satd. Flow (perm)		1127	1863	1583	1704	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	324	367	122	371	295
RTOR Reduction (vph)	0	0	0	85	48	0
Lane Group Flow (vph)	0	420	367	37	618	0
Turn Type	pm+pt			Perm		
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		26.0	18.0	18.0	26.0	
Effective Green, g (s)		26.0	18.0	18.0	26.0	
Actuated g/C Ratio		0.43	0.30	0.30	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)		536	559	475	738	
v/s Ratio Prot		c0.05	0.20		c0.36	
v/s Ratio Perm		c0.29		0.02		
v/c Ratio		0.78	0.66	0.08	0.84	
Uniform Delay, d1		14.6	18.3	15.0	15.1	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		10.9	5.9	0.3	11.0	
Delay (s)		25.5	24.2	15.4	26.1	
Level of Service		C	C	B	C	
Approach Delay (s)		25.5	22.0		26.1	
Approach LOS		C	C		C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	376	0	0	671	522	0	0	0	263	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0	6.0				6.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00				0.95	0.95	
Frt	1.00	1.00			1.00	0.85				1.00	0.95	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.97	
Satd. Flow (prot)	1770	1863			1863	1583				1681	1632	
Flt Permitted	0.10	1.00			1.00	1.00				0.95	0.95	
Satd. Flow (perm)	186	1863			1863	1583				1681	1604	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	77	392	0	0	699	544	0	0	0	309	0	55
RTOR Reduction (vph)	0	0	0	0	0	326	0	0	0	0	13	0
Lane Group Flow (vph)	77	392	0	0	699	218	0	0	0	185	166	0
Turn Type	pm+pt					Perm	Perm			Prot		
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6					2	4					
Actuated Green, G (s)	44.0	44.0			36.0	36.0				34.0	35.0	
Effective Green, g (s)	44.0	44.0			36.0	36.0				34.0	35.0	
Actuated g/C Ratio	0.49	0.49			0.40	0.40				0.38	0.39	
Clearance Time (s)	4.0	6.0			6.0	6.0				6.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	161	911			745	633				635	634	
v/s Ratio Prot	0.02	c0.21			c0.38					c0.11	0.10	
v/s Ratio Perm	0.21					0.14					0.00	
v/c Ratio	0.48	0.43			0.94	0.34				0.29	0.26	
Uniform Delay, d1	18.6	14.9			25.9	18.8				19.6	18.7	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	2.2	1.5			20.9	1.5				0.3	0.2	
Delay (s)	20.8	16.4			46.9	20.3				19.8	18.9	
Level of Service	C	B			D	C				B	B	
Approach Delay (s)		17.1			35.2			0.0			19.4	
Approach LOS		B			D			A			B	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	813	0	0	162	112	0	0	0	592	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0	6.0				6.0	5.0	
Lane Util. Factor	1.00	1.00			1.00	1.00				0.95	0.95	
Frt	1.00	1.00			1.00	0.85				1.00	0.99	
Flt Protected	0.95	1.00			1.00	1.00				0.95	0.96	
Satd. Flow (prot)	1770	1863			1863	1583				1681	1669	
Flt Permitted	0.59	1.00			1.00	1.00				0.95	0.95	
Satd. Flow (perm)	1093	1863			1863	1583				1681	1657	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	25	847	0	0	169	117	0	0	0	696	0	34
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	0	3	0
Lane Group Flow (vph)	25	847	0	0	169	48	0	0	0	369	358	0
Turn Type	pm+pt					Perm	Perm			Prot		
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6					2	4					
Actuated Green, G (s)	45.0	45.0			37.0	37.0				33.0	34.0	
Effective Green, g (s)	45.0	45.0			37.0	37.0				33.0	34.0	
Actuated g/C Ratio	0.50	0.50			0.41	0.41				0.37	0.38	
Clearance Time (s)	4.0	6.0			6.0	6.0				6.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	577	932			766	651				616	630	
v/s Ratio Prot	0.00	c0.45			0.09					c0.22	0.21	
v/s Ratio Perm	0.02					0.03					0.01	
v/c Ratio	0.04	0.91			0.22	0.07				0.60	0.57	
Uniform Delay, d1	11.5	20.6			17.2	16.1				23.1	22.2	
Progression Factor	1.00	1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2	0.0	14.3			0.7	0.2				1.6	1.2	
Delay (s)	11.5	34.9			17.8	16.3				24.7	23.4	
Level of Service	B	C			B	B				C	C	
Approach Delay (s)		34.2			17.2			0.0			24.0	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Appendix I

Public Involvement

AGENDA

1st Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

July 21, 2010
6:00 p.m. – 8:00 p.m.

6:00 p.m. – 6:30 p.m.	**Introductions** Welcome Introduction to the CAC Process	*Joe Brown (Leon County)*
6:30 p.m. – 7:00 p.m.	**Legal Review** Sunshine Law Review Elect Chair & Co-Chair CAC Bylaws	*Dan Rigo (Leon County)*
7:00 p.m. – 7:15 p.m.	**Project Overview** Project Team Introductions & other Agencies Involved Project Description Project Limits Purpose and Approach Project Schedule	*Drew Roark (RS&H)*
7:15 p.m. – 7:30 p.m.	**Public Participation** P^2 Plan Review	*Barbara Greadington*
7:30 p.m. – 8:00 p.m.	**Questions / Comments**	*All*

Additional Instructions:

At this first meeting of the CAC, the Consultant, and staff will review the project justification, goals, and project purpose along with the roles and responsibilities of each individual participating in the corridor study process.

Citizen's Advisory Committee (CAC) for Bannerman Road Corridor Study

Meeting Minutes

July 21, 2010

CAC Members Present:
Douglas R. Barkley, PE
Fred Breeze
Michael Mendez
Brad Parker
Mark E. Reichert
Joanie D. Trotman

Staff Present:
Joe Brown, PE, Director of Engineering, Leon County Public Works (LCPW)
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Dan Rigo, Assistant County Attorney, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Barbara Greadington, Barbara Greadington & Associates (BAG)
Lorene Hauser, BAG
Doris Partridge, BAG
Megan Anderson, Planning Department

Others Present:
Tony Park, PE, Leon County Public Works Director
Nawfal Ezzagaghi, PE, Environmental Review Supervisor
Tom Flanigan

I. Call to order

Mr. Joe Brown, PE called to order the first meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on July 21, 2010 at Leon County Public Works. Mr. Brown thanked members of the Bannerman Road Corridor Study CAC for volunteering to participate in the County's Public Participation Program.

II. Introductions

Introduction to the CAC Process
Mr. Brown reviewed the history of the Public Participation (pronounced P^2) Program, which began in the early 90's with County Commissioners appointing citizens with an interest in roadway projects within their area to community advisory committees. He further defined the role of the Bannerman Road Corridor Study CAC as representatives for the citizens affected by changes to

Bannerman Road. CAC members will receive input from the community through public contact meetings scheduled throughout the project process.

It was noted that previous P^2 projects included the Buck Lake Road Project, Orange Avenue Project, and Tharpe Street Project. Mr. Brown stated that while the Bannerman Road project is currently not funded for construction, it is anticipated that this project will prepare a plan which could receive grant funding. It was noted that preliminary estimates for the cost of construction is more than 50 million dollars. The updated Cost Estimates will be available through the Corridor Study based on the latest regulatory requirements and construction market trend.

III. Legal Review

A. Sunshine Law Review

Attorney Dan Rigo reviewed public meeting laws in the State of Florida.

- Sunshine Law, Chapter 286
- Public Records Law, Chapter 119
- Code of Ethics Law, Chapter 112

Mr. Rigo reviewed the importance of the Sunshine Law, which protects the public from closed door decision making. He stated that as an advisory committee appointed by the County Commissioners, the CAC is part of the Boards decision making process. It was noted that discussion about the project by any two committee members constitutes a meeting, which would have to be noticed and minutes taken. Mr. Rigo reviewed consequences of violation of the Sunshine Law.

Mr. Rigo reviewed the Code of Ethics which governs standards of conduct. It was noted that members are considered public officials and as such must adhere to the code of ethics.

It was noted that the CAC will enter into a Memorandum of Understanding with the County Commission defining the standards for construction of the project.

Mr. Rigo reviewed the Public Records Law which governs minutes, consultant records, etc.

It was noted that there may be a point in the project where either a member or his/her company may be in consideration for a contract with the county. Under P^2 policy stakeholders must abstain from voting.

Mr. Rigo reviewed the process for member e-mails which is to route e-mails to Mr. George Su for dissemination. It was noted that members cannot

respond to discussions related to this project through e-mails that contain another board member.

B. Elect Chair and Vice-Chair

Mr. Rigo opened the floor for members to nominate a chair and vice-chair. Mr. Mark Reichert nominated Mr. Brad Parker as Chair. Mr. Doug Barkley seconded the motion. The motion passed unanimously.

Mr. Mike Mendez nominated Ms. Joanie Trotman as Vice-Chair. Mr. Mark Reichert seconded the motion. The motion passed unanimously.

C. CAC Bylaws

The Bylaws were submitted and approved by the Committee.

IV. Project Overview

Mr. Drew Roark of RS&H presented the Bannerman Road Corridor Study overview which encompasses 4.6 miles of Bannerman Road from Meridian Road to Thomasville Road. The roadway was divided into three segments Meridian to Bull Headley, Bull Headley to Tekesta, and Tekesta to Thomasville. The project will look at various options such as widening to 4 lanes, maintaining 2 lanes with improvements such as, curbing and gutter, bicycle lanes, sidewalks, etc.

Mr. Roark also reviewed the subcontractors working with RS&H. The companies are:
HSA Consultants (Survey), EGS (Geotechnical), LPA (Stormwater and roadway drainage), BAG (Public involvement), Marlin Engineering (Traffic data collection), Registe, Sliger Engineering (Design analysis), and Keystone Field Services (Right-of-way).

V. Public Participation

Dr. Barbara Greadington of Barbara Greadington & Associates presented the P^2 Plan for this project. This project is a study in contrasts as the corridor includes urban, rural and commercial development. The CAC will be relied upon for leadership, guidance and advice in ensuring a campaign that is flexible, comprehensive and complete.

It was noted that the project includes a five stage process coordinating with CAC and county staff, public notice strategies, neighborhood meetings, general public meetings, and documentation of meetings.

Mr. Barkley noted that the first public meeting was on the day school begins. There was some discussion on changing the date and possible locations for public meetings.

VI. Comments

It was decided that there would be additional CAC meetings before the scheduled November meeting. The next meeting is scheduled for August 12, 2010 at 6 p.m. A suggested location was a school in the Killearn area. Mr. George Su will notify of location.

VII. Adjournment

Mr. Brad Parker adjourned the meeting at 7:25 p.m.

Minutes submitted by: Lorene Hauser

Minutes approved by:

Date approved:

BYLAWS
OF
BANNERMAN ROAD CORRIDOR STUDY
CITIZEN'S ADVISORY COMMITTEE

In order to govern its function and operation in a manner consistent with the Enabling Resolution No. **10-02** adopted by the Leon County Board of County Commissioners (hereinafter the "BCC") on **January 19, 2010**, the **Bannerman Road Corridor Study Citizen's Advisory Committee** (hereinafter the "Committee") hereby adopts as its Bylaws the following:

ARTICLE I.
APPLICABLE FLORIDA LAWS AND BCC POLICIES

Section 1.1 **Public Records Law and E-Mails:** Each member of the Committee shall comply with the Florida's Public Records Law, Chapter 119, Florida Statutes, and BCC Policy 96-4, "Policy on Public Records Law and E-Mail", as may be amended from time to time, and each member of the Committee shall be provided a copy of BCC Policy 96-4.

Section 1.2 **Government In the Sunshine Law:** Each member of the Committee shall comply with the Florida Government in the Sunshine Law, Chapter 286, Florida Statutes, as may be amended from time to time.

Section 1.3 **Code of Ethics:** The Committee shall comply with the following state laws and BCC Policies with regard to the Florida Code of Ethics for Public Officers and Employees:

Clause 1.3.1 Each member of the Committee shall comply with Section 112.3143, Florida Statutes, "Voting Conflicts", as may be amended from time to time, and shall be provided a copy of Section 112.3143.

Clause 1.3.2 Each member of the Committee shall abide by the Standards of Conduct set forth in Section 112.313, Florida Statutes, as may be amended from time to time, and shall be provided a copy of Section 112.313, Florida Statutes.

ARTICLE II.
OFFICERS AND DUTIES

Section 2.1 Immediately upon adoption of these Bylaws, the Committee shall elect from among its members a Chairperson and a Vice-Chairperson, each of whom shall serve **until the dissolution of the Committee.**

Section 2.2 The Chairperson shall preside at all meetings. In the event of the Chairperson's absence, or at the direction of the Chairperson, the Vice-Chairperson shall assume the powers and duties of the Chairperson.

Section 2.3 In the event that either the Chairperson or the Vice-Chairperson is unable to complete their terms, the Committee shall, as soon as reasonably possible, elect a replacement from among its members.

ARTICLE III.
TERM OF MEMBERS

Section 3.1 Each member shall serve on the Committee **until the dissolution of the Committee.**

ARTICLE IV.
MEETINGS

Section 4.1 **Regular Meetings:** The Committee shall hold regular meetings at a place and time agreeable to the members. Such regular meetings shall begin at **6:00 PM** and be held at **Leon County Public Works Department's Training Room** unless an alternate time and location is selected by the Committee. The duration of meetings shall not exceed **2.5** hours unless extended by a majority vote of the Committee. In order to expedite meetings, the Chairperson may place time limits on discussion of agenda items.

Section 4.2 **Special Meetings:** The Chairperson may call a special meeting of the Committee to discuss any issue properly before the Committee. Such special meeting may be convened only after notification is given to each member of the Committee and after public notice is given no later than forty-eight (48) hours before the special meeting is scheduled to begin.

Section 4.3 **Public Participation:** Although all meetings of the Committee will be open to the public, the Committee is not obligated to honor requests from the public to participate in the meetings. The Committee may, by majority vote, allow limited participation by the public if it deems it appropriate.

Section 4.4 **Meeting Agendas:** The County Staff Support Person shall assist the Chairperson of the Committee in developing an agenda for each meeting of the Committee. Any member of the Committee may request that appropriates items be placed on the agenda.

Section 4.5 **Official Acts and Quorum:** Any and all official acts by the Committee shall require a majority vote of the members present. However, the Committee shall take no such action unless a quorum is present at the meeting. In order to constitute a quorum, there must be a majority of the Committee's current membership present at the meeting. The minutes of the meeting shall reflect the number of affirmative votes on a motion and shall specify the names of any members voting against the motion.

Section 4.6 **Meeting Minutes:** Minutes shall be taken at all regular and special meetings of the Committee. The County Staff Support Person shall assist the Chairperson in determining the manner in which the minutes of the meeting shall be prepared and filed with the County in accordance with BCC Policy No. 03-15, "Board-Appointed Advisory Committees".

Section 4.7 **Procedure:** Roberts' Rules of Order Revised shall govern the procedure of all meetings.

ARTICLE V.
AMENDMENTS TO BYLAWS

Section 5.1 **Amendments:** At any regular or special meeting of the Committee, these Bylaws may be amended by an affirmative vote of a **supermajority** of the members present at the meeting. **For purposes of this section, a supermajority shall comprise no fewer than two thirds (2/3) or sixty-six percentage (66%) of the current membership of the Committee.**

Section 5.2 **Approval:** The Amended Bylaws shall become effective upon the approval of the County Administrator and the County Attorney.

ARTICLE VI.
ATTENDANCE AND REPLACEMENT OF MEMBERS

Section 6.1 **Attendance at Meetings:** In the event a member is absent from two of three successive regular meetings of the Committee, the member may be dismissed from the Committee at the discretion of either the Chairperson or the County Staff Support Person. For the purposes of this Section, a member is considered absent if he/she is absent from more than half the duration of the meeting.

Section 6.2 **Replacement of Members:** In the event a vacancy occurs in the membership of the Committee, either through dismissal, voluntary termination, or other means, the County Staff Support Person shall assist the Chairperson in determining whether the vacancy should be filled. If it is determined that the vacancy will be filled, a new member shall be appointed as soon as reasonably possible in accordance with the procedure for appointment of members to advisory committees contained in BCC Policy No. 03-15, "Board-Appointed Advisory Committees".

ARTICLE VII.
SPECIAL PROVISIONS

Section 7.1 **Transportation Corridor Study Public Participation Program:** The Committee shall also operate in accordance with Board Policy No. 03-07, "Transportation Corridor Study Public Participation (P^2) Program".

Clause 7.1.1 The Committee shall report to the BCC through its Department of Public Works Director (hereinafter the "Director"). The County's Project Manager shall be responsible for assisting the Committee with its reporting responsibilities.

Clause 7.1.2 The Committee shall provide a Corridor Study Final Report to the Director summarizing the Committee's recommendations for improvements to the corridor being studied. The Final Report, in conjunction with the Director's final set of recommendations, shall be presented to the BCC in workshop format for its use and consideration in making decisions regarding the project.

Clause 7.1.3 Members of the Committee shall serve until completion of the corridor being studied.

Clause 7.1.4 No member of the Committee, nor a relative of any member of the Committee, shall be the owner, tenant, or occupant of a property adjoining the corridor being studied, nor shall any member or member's relative be employed by an owner, tenant, or occupant of a property adjoining the corridor being studied. For purpose of this section, the term "relative" includes father, mother, son, daughter, husband, wife, brother, sister, father-in-law, mother-in-law, son-in-law, or daughter-in-law. If any of these situations exist for the appointed Committee members, then the appointment will become nullified automatically and the vacancy will be filled through the provisions in Section 6.2 of this Bylaws.

Approved As To Form and Content:

County Administrator's Office

BY: _____
Parwez Alam
County Administrator

County Attorney's Office

BY: _____, Daniel J. Rigo, for
Herbert W. A. Thiele
County Attorney

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

August 12, 2010
6:00 p.m. – 8:00 p.m.

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1. **Call to Order**

A. Agenda Modifications / Approval
B. Approval of the July 21, 2010 meeting minutes

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2. **Old Business**

RS&H Project Proposal (Information Only)

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3. **New Business**

Project Update

Schedule — *Drew Roark*
Data collection

P^2

Public participation plan review
Information Outreach plan approval — *Barbara Greadington*
Flyer/Brochure content approval
Display board content approval
Website content approval

Design Analysis

Typical section features
Corridor segments — *Drew Roark*
Desired amenities

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4. **Proposed Next Meeting Date:** November 9, 2010

Purpose: Present Data Collected and Review Open House Materials

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Additional Instructions:

The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
August 12, 2010

CAC Members Present:
Brad Parker, Chair
Joanie D. Trotman, Co-Chair
Fred Breeze
Tim Kinney
Michael Mendez
Mark E. Reichert

CAC Members Absent:
Doug Barkley, PE

Staff Present:
Charles Wu, PE, Chief of Engineering Design, Leon County Public Works (LCPW)
Dan Rigo, Assistant County Attorney, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Barbara Greadington, Barbara Greadington & Associates (BAG)
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
Regina Harris

I. Call to order

Mr. Brad Parker called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on August 12, 2010, at Bradfordville Community Center. The minutes from July 21, 2010, CAC meeting were submitted and approved along with a copy of the bylaws.

II. Old Business

CAC members were given copies of the proposal RS&H submitted to Leon County while pursuing the Bannerman Road Corridor Study in the Spring of 2009, as requested by the CAC Members during the July 21, 2010, meeting. In response to the question about the cost of the project, Mr. Roark reported the RS&H contract, which covers all subcontractors, is just under $1 million dollars.

III. New Business

A. Project Update

Mr. Drew Roark provided an update on the project schedule, data collection, and design analysis. He reported that data is being collected and design analysis is in the beginning stage.

Schedule
The Bannerman Road Corridor Study is an 18-month project with an aggressive schedule. Mr. Roark relayed this schedule could be affected if the process is "dragged out." Mr. Roark stated that if the CAC Members were prompt in making decisions, the schedule should not slip. The Corridor Study timeline could be hindered if decisions are not made in a timely manner.

Data Collection
Aerial and topographic surveys are about 60% complete and about 90% of the traffic information and 100% crash data has been collected. Collection of soil and geotechnical data has not begun.

B. Public Participation Plan (P^2)

Public Participation Plan Review
Dr. Barbara Greadington presented, for approval, changes to Task 3 of the Public Participation Plan. She explained that Task 3 revisions address CAC member concerns about implementation of small group meetings, and acknowledged that this information outreach plan is an effective strategy to educate the public about the project. The CAC was requested to review and approve the content of materials submitted.

Information Outreach Plan
Task 3 revisions include:

- Create and distribute brochures and flyers
- Design and distribute Display Boards
- Establish a Bannerman Road Corridor Study Website
- Maintain an email address

1. Flyer
   Three (3) draft flyers were considered. The CAC discussed the wisdom of distributing a flyer that included member names and email addresses. They concluded that it was important to list CAC members, but email addresses should not be included. It was also decided that public meeting information was important, as well as the County email address for the project, and should be included in the flyer.

2. Display Board
   Consideration was given to creating a poster from the approved flyer. Principal to the discussion was what information was essential for the public to have. The consensus was to design a poster from the flyer that has the November 18, 2010, Open House date and CAC member names.

   Dr. Greadington reported that several businesses in the project area have been contacted and agreed to display/distribute flyers and posters.

Flyer	Poster
Capital City Bank Publix Walgreens Another Broken Egg	 Publix Another Broken Egg (maybe)

As the project moves forward, other businesses along the corridor will be recruited to post flyers and posters.

3. Brochure
   The brochure submitted for review was designed for mailing. The cost of postage was an issue, and it was suggested that a cost-saving measure was mailing with TRIM notices. However, it was determined there was not enough time to prepare the brochure for inclusion with TRIM notices. Regarding brochure design, it was decided that the header for the brochure should be the same as used for the flyer. It was also decided that the County Commissioner names should be voided from the brochure due to uncertainties in the upcoming election and cost to reproduce such material in the event that Commission seats change.

4. Website
   The CAC was informed that the project has a website domain: www.bannermanroad.com. It was explained that the homepage submitted for review was not the final version, but the sections that would be included were: Project Overview; Public Involvement Information; Calendar of Events; Frequently Asked Questions; Links to Related Sites; and Contact Information. The content of the homepage was approved.

5. Email Address
   The County will establish a project email address and will respond to questions and comments.

C. <u>Design Analysis</u>

Mr. Roark presented an overview of the Design Analysis. The corridor is divided into three (3) segments:

- North Meridian Road to Bull Headley Road
- Bull Headley Road to Tekesta Drive
- Tekesta Drive to Thomasville Road

The CAC Members agreed that the three segments identified were indeed logical segments for the study.

Mr. Roark explained the first step is looking at developing a typical section. A typical section could include:

- 2 travel lanes

- 4 travel lanes
- Medians
- Bike lanes
- Sidewalks, and/or various other attributes.

He reported that bike lanes and sidewalks could be determined by citizen input, but that the number of travel lanes needed is defined by traffic data. He also noted that the CAC is important in providing timely feedback on design aspects to maintain the adopted schedule.

He further discussed amenities such as:

- Trees
- Lighting
- Planted medians
- Stormwater pond enhancements
- Bus pullouts

Included in the discussion was stormwater standards and how it relates to Bradfordville stormwater standards.

Additional information was provided regarding the role of the CAC in this process. It was mentioned that certain engineering standards have to be maintained. It was further explained that this study will take all technical data and provide the CAC with all options and a matrix will be generated with cost and environmental impacts. The CAC will make recommendations to the Board of County Commissioners.

During this discussion, Ms. Regina Harris of Greater Springhill Missionary Baptist Church asked for information on the project. She stated her pastor heard about the project and asked her to attend the meeting to find out how the project affects their church. Mr. Parker suggested Greater Springhill Missionary Baptist Church may be a viable site for a public meeting and requested her contact information. Mr. Roark explained that RS&H is developing a project presentation that groups such as: churches, homeowners associations, etc. can request.

IV. Next Meeting

Following a discussion regarding CAC member schedules and meeting dates, the next meeting was scheduled for October 27, 2010, at 6:00 p.m. At the next meeting members would like to preview Open House materials. The Open House is scheduled for November 18, 2010, and a suggested location large enough to host the event is the Bradfordville First Baptist Church.

CAC members queried uploading their calendars to the County's calendar but decided against it.

V. Adjournment

Mr. Brad Parker adjourned the meeting at 6:45 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

October 27, 2010
6:00 p.m. – 8:00 p.m.

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1. **Call to Order**

A. Agenda Modifications / Approval
B. Approval of the August 12, 2010 meeting minutes

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2. **Old Business**

None

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3. **New Business**

Project Update
Schedule — *Drew Roark*

Open House Materials
Project Aerials
Comment Card
Flyer / Display Board approval — *Barbara Greadington*

Design Analysis — *Drew Roark*
Typical section features
Desired amenities

Public Involvement — *Barbara Greadington*
Survey comments
Website comments
E-News Letter comments

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4. **Proposed Next Meeting Date:** November 18, 2010
Public Open House 6pm to 8pm

Purpose: Inform the Public about the Project and gather public comments

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Additional Instructions:

The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Draft Meeting Minutes
October 27, 2010

CAC Members Present:
Brad Parker, Chair
Joanie D. Trotman, Co-Chair
Doug Barkley, PE
Fred Breeze
Tim Kinney
Michael Mendez
Mark E. Reichert

Staff Present:
Joe Brown, PE,
Charles Wu, PE,
George Su, PE,
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Megan Anderson, Planning Department
Greg Bachman, Barbara Greadington & Associates (BAG)
Lorene Hauser, BAG
Doris Partridge, BAG

Others Present:
Matt Hall, Canopy Roads Baptist Church
Richard Thomas

I. Call to order

Mr. Brad Parker called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on October 27, 2010, at Bradfordville Community Center. The minutes from the August 12, 2010, CAC meeting were submitted and approved.

II. Old Business

Mr. Parker reported there was no old business.

III. New Business

A. Project Update

Mr. Drew Roark presented a slide presentation detailing project progress. It was reported that the data collection phase is almost complete, that data collected is a project milestone, the design analysis is ongoing, and the public participation is ongoing.

B. Open House Materials

Mr. Roark presented for approval a package of materials to CAC members. The materials included flyer, display poster, and comment card.

Project Aerials

Mr. Roark presented eight (8) aerial view posters measuring 24 x 38 for use at the first Open House scheduled for November 18, 2010. Mr. Nick Arnio stated the Open House is a great opportunity for members to circulate with the public. Mr. Parker asked if all members needed to be present at the Open House. Mr. Joe Brown responded that not all members needed to attend but suggested that since there are several open houses throughout the project, members might consider deciding amongst themselves who will attend.

Comment Card

Mr. Roark presented for approval the comment card for use at the Open House on November 18, 2010.

Flyer/Display Board approval

Mr. Roark presented for approval the flyer and poster for display at area businesses. The content of the flyer was approved at the previous CAC meeting.

During the discussion of the Open House, Mr. Matt Hall of Canopy Roads Church offered the church as a location for an open house.

C. Design Analysis

Typical Section Features

Mr. Roark presented information on the design analysis that includes typical section features, desired amenities, right of way cost, construction cost, and constructability. The presentation included both photos and engineering details of:

- Two (2) lane roadways with and without medians
- Four (4) lane roadways with and without medians
- Photos of bicycle amenities
- Photos of pedestrian facilities
- Roadways with 40', 72', 84', 96', 106', and 118' right of way widths

Desired Amenities

After presenting roadway features, Mr. Roark spoke to members about roadway amenities. He asked that CAC members complete a survey tonight detailing roadway features and amenities each believes is necessary for each segment. The roadway is broken into 3 segments:

- Segment 1: Meridian to Bull Headley
- Segment 2: Bull Headley to Tekesta
- Segment 3: Tekesta to Thomasville

Mr. Roark reminded members that in completing the survey, they should keep in mind cost and construction. The more amenities, the higher the cost.

Mr. Tim Kinney asked if members would complete the survey without knowledge of right of way issues. Mr. Douglas Barkley asked if amenities must be equal on both sides of the roadway. Mr. Joe Brown reminded members that there would be hard decisions to make as parts of the roadway needs amenities on both sides. Mr. Brown added that if the County is maintaining the right of way then it ultimately becomes the property of the county. Mr. Roark added that environmental consideration must be taken into completing the survey as well. Mr. Charles Wu also added that stormwater is part of the proposal. Mr. Mark Reichert asked if a hybrid road is a possibility.
Mr. Reichert asked about the future build out. Mr. Roark replied that there is a travel demand computer model showing future traffic. The model is in flux since the economy has dropped. He added that Meridian to Bull Headley would most likely be a 2 lane, Bull Headley to Tekesta could be a 2 lane or 4 lane, and Tekesta to Thomasville would require 4 lanes to function at an acceptable level of service (LOS). Mr. Roark answered that each segment would be graded. Mr. Roark clarified that the purpose of the survey is give the engineers a starting point for ideas on the typical sections and that the results of tonights survey would not be a final decision.

Mr. Michael Mendez stated that in looking at Capital Regional Transportation Planning Association (CRTPA), it shows Bannerman as a zero (0) for a 4 lane roadway. How does this rate with the local Metropolitan Planning Organization (MPO)? He is concerned about the numbers. Further discussion was tabled until the next meeting when more information would be available.

Mr. Fred Breeze stated that people living on the southside of Bannerman may need to make U-turns. Mr. Bradley asked if a dedicated left turn lane was viable to prevent this. Mr. Brown stated that there is no need to make those decisions at this juncture. More information is needed. There are some areas where unique designs are merited. For example, on Buck Lake Road a massive tree was kept by widening the median, creating a roundabout to keep tree and allow access from subdivisions.

Mr. Tim Kinney asked if a multi-use path eliminated the need for a bike lane. Mr. Roark stated that a multi-use path could take the place of bicycle lanes, but reminded members that more amenities are costly.

The survey was completed. Mr. Arnio tabulated and read the results to members. Please see attached survey results for final numbers.

D. <u>Public Involvement</u>

Survey Comments

Mr. Greg Bachman submitted for approval a survey on the website. Mr. Bachman stated it would be a great way to collect people's ideas on the various segments of the roadway. He reported that the survey could be created to only

be completed once from an IP address, thereby inhibiting users from inputing their opinions multiple times and skewing the results. Mr. Brown added that this would be the first of several surveys over the course of the project. Mr. Barkley asked if the survey could be changed to include multiple choice questions. He also noted that he has objections to question #2. Mr. Breeze asked if the survey could include a statement that reminds the public that more amenities are costly because as the survey is written unlimited amenities are available. Mr. Roark reminded members that the purpose of the survey was to get as much feedback as possible from the public but that the CAC will need to concur on final decisions. Mr. Mendez commented that while the idea of gathering information is useful, if the survey is flawed then the results would be flawed.The current survey was tabled. CAC members requested another survey be developed.

Website Comments

Mr. Bachman presented for approval the content of the Bannerman Road Corridor Study website: www.bannermanroad.com. Mr. Bachman reviewed each page with committee members. The webpage includes:

- Home – project status, calendar
- Overview – points along the road
- Schedule – project timeline
- Study Contents and Activities – describes areas of study and wide range of technical studies
- Alternatives – looks at a number of criteria
- Study Steps – steps of project
- FAQs – frequently asked questions
- Community

Mr. Bachman reported that the front page of the website would change to include updates on project status and calendar of events for each month. He added that also on the front page is an area for interested parties to enter their email address to receive e-newsletters. It was noted that the website was not currently live but upon CAC approval would be ready the next day.

E-Newsletter Comments

Mr. Bachman presented for approval a draft e-newsletter. This e-newsletter will be mailed to residents completing the request on the website. He reported that the current photo in the newsletter would be replaced with a photo of the CAC members.

All materials submitted for approval were approved with the exception of the survey which was tabled until another survey could be developed. CAC members requested copies of flyers and posters for distribution.

IV. Next Meeting

Following a discussion regarding CAC member schedules and meeting dates, the next meeting will be scheduled at a later date. Mr. George Su of Leon County Public

Works Department will send out emails in early December to CAC members to coordinate the next meeting date, time and place.

V. Adjournment

Mr. Brad Parker adjourned the meeting at 7:35 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Results - Average

10/27/2010

	Segment		
Roadway Feature	1	2	3
2-Lane	2.3	1.1	
4-Lane	0.7	2.3	2.9
Grass Median	1.0	1.7	1.9
Center Turn-Lane	0.9	0.6	0.6
Amenities	1	2	3
Sidewalk 1-side	1.6	1.3	1.3
Sidewalk 2-sides	0.4	1.3	1.4
Bike Lanes	1.0	1.3	1.6
Multi-use Path	1.4	2.1	2.3
Curb & Gutter	1.1	2.3	2.4
Swales	1.4	1.0	1.0

Rank each box 0 to 3, 0 if you do not desire that feature, 3 if you highly desire that feature

Notes:

"Mulit-use path first preference for sections 2 & 3 if it will also accomodate both pedestrians & bikes",

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

January 12, 2011
6:00 p.m. – 8:00 p.m.

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1. **Call to Order**

A. Agenda Modifications / Approval
B. Approval of the October 27, 2010 meeting minutes

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2. **Old Business**

None

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3. **New Business**

November 18th Open House Review — *Drew Roark*
Attendance
Comments
Recommendations

Project Update — *Drew Roark*
Design Analysis
Typical Sections – CAC Action Required

Public Involvement — *Barbara Greadington*
Website comments
E-News Letter comments

CAC Meeting Location — *Barbara Greadington*
Alternate venue?

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4. **Proposed Next Meeting Date:** February 9, 2011

Purpose: Update CAC and interested public. CAC will make decisions related to the project progress

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Additional Instructions:

The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
January 12, 2011

CAC Members Present:
Brad Parker, Chair
Doug Barkley, PE
Fred Breeze
Michael Mendez
Mark E. Reichert

CAC Members Absent:
Joanie D. Trotman, Co-Chair
Tim Kinney

Staff Present:
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Drew Draper, PTP, RS&H
Megan Doherty, Planning Department
Lorene Hauser, Barbara Greadington & Associates (BAG)
Lauren Hauser, BAG
Doris Partridge, BAG

Others Present:
Ed Ringe, PE, LPA Group
Lauren Boes, E.I., LPA Group
Meredith Hurd, LPA Group
Darlyne Bryant
Steve Bryant

I. Call to order

Mr. Brad Parker called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on January 12, 2011, at Bradfordville Community Center. The minutes from the October 27, 2010, CAC meeting were submitted and approved.

II. Old Business

There was no old business.

III. New Business

A. November 18 Open House Review

Mr. Nick Arnio reported on the results of the first Bannerman Road Corridor Study Open House held at the Bradfordville First Baptist Church on November 18, 2010, at 6:00 p.m.

Attendance
Mr. Arnio reported that approximately 100 people attended the Open House. Attendees were given comment cards to complete.

Comments
Mr. Arnio reported that 43 comment cards were completed. He added the issues or concerns attendees noted are: noise, bike lanes, turn lanes, sidewalks, flooding, widening the road, safety, keeping the roadside ditch vs. constructing curb and gutter, median with trees, beautification, and issues with notification and more formal presentation. He informed members that responses will be sent to those who provided input on the comment cards. Mr. Fred Breeze requested that responses to the comment cards be provided to the CAC. Mr. Doug Barkley asked when a sound study will be completed. Mr. Arnio responded it should occur around April of this year. It was announced that Mr. Ed Ringe, PE, of LPA will speak on drainage and stormwater issues.

Recommendations
Mr. Arnio reported that one of the issues with the Open House was that it was informal. He stated that the next Open House in April will be a formal meeting. Mr. Parker suggested that having an article in the Tallahassee Democrat about the upcoming April Open House would be helpful.

B. <u>Project Update</u>
Mr. Arnio presented a slide presentation updating CAC members on project progress. It was reported that the data collection phase is complete, the design analysis is ongoing, and the public participation is ongoing.

Design Analysis
Mr. Arnio showed slides of current and projected population and households for the study area. He reported that the growth rate of the Bannerman Road area is 1% per year. This information was generated by analyzing the historic traffic trends, growth rates comparing 2007 vs. 2035 population and households, and the Capital Region Transportation Planning Agency (CRTPA) travel demand model. Mr. Michael Mendez inquired about the data used to obtain the historic growth. It was noted that the existing traffic data from 2000-2010 was used, as well as the number of households and area population. After examining the growth rates calculated using each of these methods, the accepted growth rate for the study area was reported as 1% per year.

Mr. Arnio explained that the project has been broken into segments: Segment 1 (Meridian Road to Bull Headley Road), Segment 2 (Bull Headley Road to Tekesta Drive), and Segment 3 (Tekesta Drive to Thomasville Road). He

explained that a traffic level of service (LOS) analysis was completed for the existing (2010) and future (2035) timeframes. Currently the LOS for Segment 1 is C, Segment 2 is D, and Segment 3 is F. He added that with a 1% per year growth the 2035 LOS for Segment 1 is C, Segment 2 is D and Segment 3 is F. The future traffic demand for Segment 3 will require additional lanes to maintain an acceptable level of service, but Segments 1 and 2 will not require additional travel lanes.

Typical Sections

Mr. Arnio presented the results of the survey completed at the October 27, 2010, CAC meeting highlighting roadway features and amenities which each member ranked in order of importance. The results are as follows:

- Segment 1 – Meridian Road to Bull Headley Road
  Members felt this segment was best suited as a 2 lane roadway with a sidewalk on 1 side or multiuse path. Bike lanes and 12 foot travel lanes with swales as opposed to a curb and gutter system were also favored. Mr. Arnio presented roadway typical section details of for Segment 1 with right of way footprints of 110, 118, and 126 foot right of ways. Mr. Parker asked what the right of way was today. It was noted it is a 40 foot right of way. Mr. Mendez asked where the storm water was draining. It is currently running off the road into the existing swales and is not treated.

- Segment 2 – Bull Headley Road to Tekesta Drive
  Most members felt this segment was best suited as a 4 lane roadway with sidewalks or a multiuse path and bike lanes – an urban feel. Mr. Arnio presented typical section drawings for this segment with examples of 115, 120, and 130 foot right of ways.

- Segment 3 – Tekesta Drive to Thomasville Road
  Most members felt this segment would be best suited as a 4 lane roadway with grass medians, sidewalks or a multiuse path, and bike lanes. Mr. Arnio presented engineering details of this segment with examples of 162.8, and 170.4 foot right of ways.

Mr. Arnio presented the drainage engineering consultant, Ed Ringe, PE, of LPA Group to give members alternative treatment storm water ideas. Mr. Ringe gave an overview of LPA Group. He stated that they have evaluated criteria for all 3 segments which fall under Leon County except for the east end. Mr. Ringe provided members with a roadway concept of gravel sub-layers with engineered topsoil that would allow storm water to percolate into a gravel layer with raised curb median, and would require 175 feet right of way. He added that this concept of a gravel sub-layer is used by the Department of Transportation and gives a bigger footprint to soil. He added that this system would have overflow on one end and trash would collect at the other end. Members discussed the construction expense of this system, maintenance, the system's compliance with the Bradfordville standards, system effects on lakes in the area, and permitting

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

February 9, 2011
6:00 p.m. – 8:00 p.m.

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1. **Call to Order**

A. Agenda Modifications / Approval
B. Approval of the January 12, 2011 meeting minutes

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2. **Old Business**

None

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3. **New Business**

CAC Position Vacancy — *Chairman Parker*

Project Update

Traffic Analysis — *Drew Draper, PTP*
Roadway Typical Sections — *Nick Arnio, PE*
Roadway Alignments — *Ed Ringe, PE*
Stormwater Analysis — *Judy Hayden, PE*
Geotechnical Investigation

Public Involvement

Website updates / FAQ — *Barbara Greadington*
E-News Letter

April Public Meeting Location

Canopy Roads Baptist Church — *Barbara Greadington*
Bradfordville 1st Baptist Church

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4. **Proposed Next Meeting Date:** March 9, 2011
Time: TBD

Purpose: Update CAC and interested public. CAC will make decisions related to the project progress

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Additional Instructions:

The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
February 9, 2011

CAC Members Present:
Brad Parker, Chair
Joanie D. Trotman, Co-Chair
Doug Barkley, PE
Fred Breeze
Michael Mendez
Mark E. Reichert

CAC Members Absent:
Tim Kinney

Staff Present:
Tony Park, Director, Leon County Department of Public Works (LCPW)
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Drew Draper, PTP, RS&H
Megan Doherty, City of Tallahassee Planning Department
Barbara Greadington, Barbara Greadington & Associates (BAG)
Greg Bachman, BAG
Lorene Hauser, BAG
Doris Partridge, BAG
Lauren Hauser, BAG

Others Present:
Ed Ringe, PE, LPA Group
Lauren Boes, E.I., LPA Group
Tom Hayden, PE, Environmental and Geological Services, Inc. (EGS)
Judy Hayden, Ph.D., PE, EGS
Michael Zavolas
Stan Peacock

I. Call to order

Mr. Brad Parker called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on February 9, 2011, at Bradfordville Community Center. The minutes from the January 12, 2011, CAC meeting were submitted and approved. Members were asked to review meeting agenda for modifications.

II. Old Business

There was no old business.

III. New Business

CAC Position Vacancy

Mr. Parker informed members that due to scheduling conflicts Mr. Tim Kinney resigned from the Citizens Advisory Committee. He added that the Leon County Commissioners will appoint a replacement.

A. Project Update

Mr. Nick Arnio began the slide presentation with a detailed description of project progress. He updated members on the project schedule, which began in June 2010, and is anticipated to be completed November 2011. It was reported that the project is halfway through the design analysis. He added that the upcoming April public meeting would give the public an opportunity to become familiar with the project and the road segments.

Traffic Analysis

Mr. Drew Draper presented information on the traffic analysis approach utilized to arrive at the 1% growth rate for the Bannerman Road corridor. This information was generated from the collection, comparison and sample validation of traffic data. He reported that the traffic analysis included data from 72-hour traffic counts, which were compared to Leon County historical data. He added that forecasting focused on households, population and traffic growth rates, the Capital Region Transportation Planning Agency (CRTPA) travel demand model, and historic trends analysis. He presented slides detailing the growth rate for the Bannerman Road corridor, which was reported to be 1% per year through 2035. He added that the growth rate and traffic level of service (LOS) for each segment is as follows:

- Segment 1 Meridian Road to Bull Headley Road: 1.1%, LOS C
- Segment 2 Bull Headley Road to Tekesta Drive: 1.4%, LOS D
- Segment 3 Tekesta Drive to Thomasville Road" .6%, LOS F

Mr. Draper reported that, based on population and number of households, Segment 3 fails to meet the required LOS under existing conditions and cannot handle increased future volume. All land use was analyzed and the corridor has a fairly low growth rate. Segment 2 would need a 2.5% growth rate over 25 years to trigger issues. Mr. Michael Mendez asked for clarification on the growth rate for the county. It was reported that it is 2% per year. Mr. Mendez asked how grades relate to traffic delays. Mr. Drew Roark clarified that an "A" is given for free flowing traffic and and "F" for gridlock. It was noted that the descriptions are from the Florida Department of Transportation (FDOT). Mr. Fred Breeze requested more information on roadway grades.

Roadway Typical Sections

Mr. Arnio reported that Segment 3 was identified by the October 27, 2010 survey as requiring 4 lanes. The desired amenities for Segment 3 are 4 lanes, a multi-use path, grass medians, and right and left turn lanes.

Roadway Alignments
Mr. Arnio presented details of two alternatives to current roadway alignments. Alternate A has swale drainage, 4 lanes, and a 160-foot right of way. Alternate B has closed stormwater drainage, curb and gutter. It was noted that the least amount of impact is desired. Members were reminded that in completing the planning matrix that residential impact, business impact and construction costs should be factored into decisions.

Stormwater Analysis
Ed Ringe, PE, of LPA Group reviewed the stormwater design approach. He said the approach considers many factors. These include establishing meeting with permitting agencies for special requirements, discussing potential management approaches, obtaining topographic data, including field surveys of existing drainage elements, conducting field verification, determining possible stormwater management approaches, establishing proposed improvement, determining pre-improvement runoff discharge rates and volumes, determining post-improvement discharge rates, projecting retention and treatment volumes, establishing potential stormwater management areas, and developing concept designs.

Mr. Ringe informed CAC members that Segments 1 and 2 are within the Lake Jackson watershed. The Lake Jackson watershed's controlling criteria is to retain post-development 50 year/24 hour runoff volume on-site, with 50% recovery within 7 days, and the remainder within 30 Days. For a 9.5" rainfall – approximately 6-7" will be runoff, and design must utilize a factor of safety (F.S.) of 2. Basing stormwater management strictly on post run-off will be an expensive land design.

He added that 90% of Segment 3 is located in the Bradfordville Study Area (BSA). This area's typical controlling criterion is retention of 4" runoff from impervious (paved), recovery in 72 hours, and design must utilize a F.S. of 2.

There was some discussion on credit for impervious, swales, maintenance issues, dry retention, wet retention, area needs, etc.

Geotechnical Investigation
Tom Hayden, PE, and Judy Hayden, PE, of Environmental and Geological Services, Inc. (EGS) were invited to comment on geotechnical issues. In response to inquiries on the possibility of finding sand layers, Mr. Hayden replied that it is a possibility but not guaranteed. A PD& E boring was completed. The expense of the initial investment should be weighed. Some options would be to look at some things done for gas stations. As far as linear stormwater flow, swales are definitely a viable and cost-effective option. The expense of initial investment must be weighed because finding a sand layer may require drilling relatively deep borings.

Several slides detailing locations of sample small pond sites throughout the project were presented for member review. There was discussion on the

economic impact, environmental rules, sand layers, federal criteria for project, expense, etc. Mr. Arnio informed members that the project will be 30% completed in time for the next public meeting.

B. Public Involvement

Website Updates/FAQ

Mr. Greg Bachman reviewed the Bannerman Road website, which has information on project schedule, overview, activities, etc. The Frequently Asked Questions (FAQ) page was updated with new questions and answers. Website traffic increased when the new e-letter was distributed. Between January 7 and February 6, 2011, there were 100 website visits with an average of 3.78 pages visited, 70% new visits to the site, and an average time of 2:28 on the site.

E-Newsletter Letter

Mr. Bachman reported on the newest e-letter distributed January 21, 2011, which gave an update on project progress.

C. April Public Meeting Location

Dr. Barbara Greadington presented for review two possible sites for public meetings.

Canopy Roads Baptist Church

Dr. Greadington reported that Canopy Roads Baptist Church was contacted and is interested in hosting the April public meeting.

Bradfordville First Baptist Church

Dr. Greadington also reported that Bradfordville Baptist Church, the first public meeting site, would like to again host a public meeting, but has not been confirmed for the April public meeting.

Members reviewed several dates for the April meeting and April 12, 2011, was the agreed upon date, pending verification of schedule conflicts with Leon County Commissioners.

IV. Next Meeting

The next meeting is scheduled for Wednesday, March 9, 2011, at the Bradfordville Community Center.

V. Adjournment

Mr. Brad Parker adjourned the meeting at 7:00 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

process for this system. Members requested that Myron Haden, PE, and Judy Hayden, PE, of Environmental and Geological Services, Inc. (EGS) attend the next CAC meeting. EGS is providing geotechnical services for the corridor study. Mr. George Su asked Mr. Ringe to review other options. Mr. Drew Roark added that other alternatives will be developed which will look at cost efficiency. Mr. Barkley added that members need to use their imagination in thinking of options that will make the project a reality.

Mr. Arnio presented an example of an evaluation matrix for members to begin compiling criteria for the Bannerman Road study. He asked that they make notes and include evaluation criteria that are important. He added that drainage will be important. Mr. Su will send a copy of the matrix for members.

C. Public Involvement

Ms. Lorene Hauser updated members on meeting planning and promotion, website changes, and the e-Letter. She stated that in addition to Bradfordville First Baptist Church, who hosted the November 18, 2010, Open House, two additional sites have been identified for open houses and CAC meetings: Canopy Roads Baptist Church and Christ Presbyterian Church. She added that rotating among churches would bring out more members of the host church and that scheduling conflicts can be avoided by having firm dates.

Website Comments

Ms. Hauser reported that the website was updated after the November 18 Open House. There was a peak in website activity around the time it was announced and to-date there has been a total of 438 visits with about 3-4 each business day and 33% of the visitors to the site are repeat visits.

E-Newsletter Comments

Ms. Hauser reported that the first e-newsletter was sent out in December 2010 and the next will be emailed by January 21, 2011. As of the January CAC Meeting there are 63 subscribers signed up for the e-newsletter.

Mr. Arnio added that there are business cards with contact information for the study which can be distributed.

IV. Next Meeting

The next meeting is scheduled for Wednesday, February 9, 2011, at the Bradfordville Community Center.

V. Adjournment

Mr. Brad Parker adjourned the meeting at 7:00 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

April 6, 2011
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the February 9, 2011 meeting minutes	*Chairman Parker*
2.	**Old Business** CAC Position Vacancy	*George Su, PE*
	Summary of stormwater rules applicable to the project	*Charles Wu, PE*
	Traffic Operational Performance Example/Explanation for Segment 3	*Nick Arnio, PE*
3.	**New Business**	
	Project Update Roadway Typical Sections Roadway Alignments Segment 1, 2 & 3 Alternatives Evaluation Matrix (Draft) Noise Study Data Collection	*Nick Arnio, PE*
	Stormwater Analysis	*Ed Ringe, PE*
	Public Involvement Website updates E-News Letter	*Gregory Bachman*
	May 19th Public Meeting Canopy Roads Baptist Church Advertisement for Public Meeting	*Gregory Bachman*
	Format: 30 minute Open House 20 minute presentation (RS&H) Remainder – Open House	*Nick Arnio, PE*
	*Comments will be received via written comment cards and through discussions with CAC Members, County Staff and Consultants.	
4.	**Proposed Next Meeting Date:** May 19, 2011 **Time:** 6pm to 8pm **Purpose:** 2nd of 3 Public Open House Meetings	

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
April 6, 2011

CAC Members Present:
Brad Parker, Chair
Joanie D. Trotman, Co-Chair
Doug Barkley, PE
Fred Breeze
Michael Mendez
Mark E. Reichert

Staff Present:
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Drew Draper, PTP, RS&H
Megan Doherty, Planning Department
Greg Bachman, Barbara Greadington & Associates (BAG)
Doris Partridge, BAG
Lauren Hauser, BAG

Others Present:
Ed Ringe, PE, LPA Group
Lauren Boes, LPA Group
Joe Barnett
John Butler
Hubert Baxter

I. Call to order

Mr. Brad Parker called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on April 6, 2011, at Bradfordville Community Center. The minutes from the February 9, 2011, CAC meeting were submitted and approved.

II. Old Business

Members were given CAC bylaw signature pages for their records. Mr. Nick Arnio presented slides outlining the summary of storm water rules applicable to the project. It was reported that the
information on storm water for the roadway was taken to Growth Management.

A. CAC Position Vacancy

Mr. George Su informed members that the Leon County Commissioners will review the appointment of a new CAC member to fill the current vacancy at the next County meeting April 12, 2011.

B. Traffic Operational Performance Example and Explanation for Segment 3
Corridor segments are:

- Segment 1: North Meridian Road to Bull Headley Road
- Segment 2: Bull Headley Road to Tekesta Drive, and
- Segment 3: Tekesta Drive to Thomasville Road.

The stormwater requirements for Segments 1 and 2 were discussed. The combination of a porous pavement and a gravel layer under the sidewalk/multi-use path will create enough voids to eliminate the need for a separate stormwater pond. There was some concern about materials that would make the pavement too rough. Mr. Wu replied that the material will be softer and therefore smoother.

Mr. Arnio presented an explanation for Segment 3 which outlined existing conditions, growth rate methodology, future no-build conditions and build conditions. It was reported that this segment would be wider because of traffic. The traffic operation performance takes a deeper look at Segment 3.

Mr. Drew Draper presented slides detailing traffic counts for Segment 3. The traffic counts were taken east bound, west bound going to and from work during peak hours (5:30 – 6:30 p.m. and 7:15 – 8:30 a.m.). He summarized the results west bound vehicles as 1234 to 925 vehicles per hour (vph) because of multi-access points. Travel time analysis was reported as:

- Off-Peak: 2 minutes 30 seconds
- Longest: 3 minutes 46 seconds
- Average: 3 minutes 28 seconds
- Shortest: 3 minutes 15 seconds

Travel Speeds were:

- Off-Peak: 43 mph
- Slowest: 25 mph
- Average: 29 mph
- Fastest: 32 mph

Mr. Draper reported on the Level of Service (LOS) factors that affect flow rate, which are lane width and lateral clearances, geometric design, access points, passing zones, driver population, median type, and heavy vehicles. He reviewed criteria for each LOS which are:

LOS A

- Free flow operation. Without strict enforcement, this highest quality would result in free flow travel speeds
- Percent Time Spent Following ≤ 35 %

LOS B

- Reasonably free flow
- Ability to maneuver is only slightly restricted
- Effects of minor incidents still easily absorbed
- Percent Time Spent Following > 35 – 50%

LOS C

- Flow increases, resulting in noticeable increases in platoon formation
- Percent Time Spent Following > 50 - 65 %

LOS D

- Represent unstable flow and turning vehicles along with roadside distractions cause major shock waves
- Percent Time Spent Following > 65 – 80%

LOS E

- Operation near or at capacity
- No usable gaps in the traffic stream
- Operations extremely volatile
- Any disruption causes queuing
- Percent Time Spent Following > 80%

LOS F

- Breakdown in flow
- Queues form behind breakdown points
- Demand > Capacity

Mr. Draper reviewed traffic forecasting, historical traffic trends, and population growth. He reported that under existing traffic conditions Segment 3 has an LOS of D with 57 second south bound delay and 53 second west bound at the Tekesta intersection during the morning. He added that with the growth rate over 1%, the forecast future volumes would be in the range of 20,900 in 2035. The future evening calculated travel time runs (5:30 – 6:30 p.m.) is estimated at 3 minutes, 54 seconds with a travel speed of 26 mph. The future highway operational results for the roadway are LOS E, which does not meet requirements. There was discussion on utilization of turn lanes to help decrease travel time. It was estimated that the future 4 lane build operations will have a travel speed of 48 mph, future build drops to 2 minutes, 6 seconds and under peak hour travel speed increases.

III. New Business

A. Project Update

Mr. Nick Arnio presented slides detailing project progress, roadway sections, corridor map, and roadway alignments. He updated members on the project schedule, which began in June 2010, and is anticipated to be completed November 2011. It was reported that by mid-summer, the 30% plans are due. He added that the upcoming May public meeting would give the public an opportunity to become familiar with the project and the road segments.

Roadway Typical Sections
Mr. Arnio reported that Segments 1 and 2 are determined to not be widened to 4 lanes. Slides presented gave detailed descriptions with five alternatives: multi-use paths, sidewalks one side (swale), sidewalks both sides (swale), sidewalk one side (curb and gutter), sidewalks both sides (curb and gutter). Of the five alternatives, it should be narrowed down to three. Mr. Arnio presented slides detailing Segment 3 with a 4 lane roadway with a multi-use path, curb and gutter, and swale.

Roadway Alignments
Mr. Arnio presented slides detailing roadway alignments showing alternatives to see what amenities are available and the impact for each segment. From the alternatives presented, it is proposed that 3 are used for the public meeting.

Segment 1, 2, and 3 Alternatives
The alternatives for each segment are:

- Segments 1 & 2
  A. Multi-Use Path
  B. Sidewalk one side (Swale)
  C. Sidewalk both sides (Swale)
  D. Sidewalk one side (curb &gutter)
  E. Sidewalk both sides (curb &gutter)
- Segment 3
  A. Swales, widen south
  B. Curb & Gutter, widen south
  C. Curb & Gutter, widen north

Mr. Arnio reported that for the public meeting, members chose Alternatives A, B, and C for Segments 1 and 2.

Evaluation Matrix (Draft)
The draft Evaluation Matrix was presented with the alternatives that need to be ranked in order of desirability. Members reviewed the corridor map with segment details.

Noise Study Data Collection
Mr. Arnio reported that the noise data collection will look at future traffic numbers, which will be posted on the website, proximity of travel lanes and noise level increase. He added pictures were taken along the roadway focusing on Segment 3 as that is the segment that will be widened.

Storm Water Analysis
Mr. Ed Ringe reported that for Segment 1 and 2 the storm water analysis impact is very desirable to cut costs. It would have one pond site which touches Lake Jackson. The drainage would have:

- Varying levels of pedestrian and safety improvements are being considered as alternates
- Treatment and attenuation ofstormwater will be through the use of pervious pavement or coarse aggregate under the sidewalk(s)
- Curb and gutter alternates dictate significant stormwater collection and conveyance features to avoid Lake Jackson requirements.

Segment 3'sdrainage:

- Multiple 4-lane roadway improvements are being considered as alternates
- Treatment and attenuation of storm water will be through the use of storm water ponds with an aggregate recovery layer below the ground surface.
- All regulating criteria is proposed to be me in the pond design

He reported that there are 2 choices swale sections versus standard curb and gutter sections. Most treatment can be done in swale but a smaller pond is needed. He is trying to refine acreage to determine pond sites. He presented a typical section of pond.

B. Public Involvement

Website Updates
Mr. Greg Bachman reported that the website generates roughly 100 people per month with a total of 276 visitors looking at over 3 pages and 73% are new visitors. Most of the people visiting the site are from Tallahassee but there are some from Jacksonville and other areas.

E-News Letter
Mr. Bachman stated that the email subscribers have increased from 28 in October 2010 to 82 by April 1, 2011. He added that the third e-newsletter was distributed March 3, 2011.

C. May 19th Public Meeting

Canopy Roads Baptist Church
Mr. Arnio reported that the next public meeting is scheduled for May 19, 2011, at Canopy Roads Baptist Church from 6 p.m. to 8 p.m.

Advertisement for Public Meeting
Slides detailing the public meeting flyer and locations for posting were presented.

Format
Mr. Arnio reviewed the format of the meeting, which is a 30 minute Open House, followed by a 20-30 minute Formal Presentation, and closing with a 1 hour Open House. He presented proposed display boards detailing each segment and proposed project write up.

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

June 7, 2011
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the April 6, 2011 meeting minutes	*Vice Chairman Trotman*
2.	**Old Business** Introduce two new CAC Members Elect a new Chairman	*Vice Chairman Trotman*
3.	**New Business**	
	May 19th Public Meeting Canopy Roads Baptist Church	*Nick Arnio, PE*
	76 Signed in 49 comments received Email list and Website Update	*Gregory Bachman*
	Project Schedule Additional geotechnical data Matrix update	*Nick Arnio, PE*
	Preferred Alternative Selection Segments 1 & 2 A – Multi-use Path B – Sidewalk one-side C – Sidewalk both sides Segment 3 A – 4-lane Swales, widen south B – 4-lane c&g, widen south C – 4-lane c&g, widen north	*Nick Arnio, PE*
	Workshop #1 with County Commission (August)	
4.	**Proposed Next Meeting Date:** July 7, 2011 **Time:** 6pm to 8pm **Purpose:** CAC Normal Business	

Additional Instructions:
The meeting will be held at Trinity Community Church. The location is 2285 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
June 7, 2011

CAC Members Present:
Joanie D. Trotman, Vice-Chair
Doug Barkley, PE
Fred Breeze
Winifred Heggins
Michael Mendez
Stan Peacock
Mark E. Reichert

Staff Present:
Kathy Burke, PE, LCPW
Charles Wu, PE, LCPW
George Su, PE, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Drew Draper, PTP, RS&H
Megan Doherty, Planning Department
Greg Bachman, Barbara Greadington & Associates (BAG)
Doris Partridge, BAG
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
Ed Ringe, PE, LPA Group
Lauren Boes, LPA Group
Myron Hayden, PE, EGS
Taita Scott, Greater Springhill MB Church
Jose & Jessica Ubieta

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on June 7, 2011, at Trinity Community Church, 2285 Bannerman Road. The minutes from the April 6, 2011, CAC meeting were submitted and approved.

II. Old Business

Introduce Two New CAC Members

Ms. Trotman welcomed and introduced new CAC members, Ms. Winifred Heggins and Mr. Stan Peacock. Each presented their background information. Mr. Peacock, appointed by Commissioner Jane Sauls, is an optometrist and business owner raised in Tallahassee. Ms. Heggins, appointed by Commissioner Bill Proctor, is a

former Tallahassee Police Officer currently working in social services at a community program.

Elect a New Chairman
With the resignation of Chair, Brad Parker, Ms. Joanie Trotman was nominated to serve as Chair of the CAC. The motion to nominate Ms. Trotman was approved. Mr. Fred Breeze was nominated to serve as Vice-Chair. The motion was approved. The new CAC Officers are Ms. Joanie Trotman, Chair and Mr. Fred Breeze, Vice-Chair.

III. New Business

A. May 19th Public Meeting

Canopy Roads Baptist Church
Mr. Nick Arnio reported that approximately 80 people attended the second Open House, May 19, 2011, at Canopy Roads Baptist Church. Of the 80 attendees, 49 submitted comment cards. Public concerns included: noise, bike lanes, turn lanes, sidewalks, flooding, meeting format, additional signals, safety, property values, median, capacity, right-of-way, and storm water. Mr. Arnio presented a side-by-side graph comparing public concerns at each Open House. In the first Open House, the top 3 public concerns were noise issues, bike lanes, and turn lanes. In the second Open House, the top public concern was storm water and drainage.

Email List and Website Update
Mr. Greg Bachman reported the website was updated, the eLetter was sent out May 13, 2011, and the county news release was sent out May 17, 2011. There were 74 hits on the website after the news release and eLetter were released. It was noted approximately 100 people subscribe to the eLetter.

B. Project Schedule

Mr. Arnio highlighted the next project milestone, which will be in August or September where the CAC presents to the Board of County Commissioners.

Additional geotechnical data
Mr. Arnio presented several slides detailing 18 soil borings within segments 1, 2, and 3 along Bannerman Road for storm water analysis.

C. Preferred Alternative Selection

Segments 1&2
It was reported that Segments 1 and 2 have three alternatives:

- A-multi-use path,
- B-sidewalk one side, and
- C-sidewalk both sides.
- An additional alternative D is no build.

Mr. Arnio reviewed slides pertaining to alternatives A, B and C for segments 1 and 2. For Segment 1, he reviewed the matrix which shows right-of-way and

number of homes impacted. He was queried as to a potential contamination site for Segment 1, which is the fire station. Alternative C was reported to impact 74 residences and the right of way cost is calculated on a comparative basis. The reported potential contamination site for segment 2 is the gas station.

Segment 3
Mr. Arnio reviewed the alternatives for Segment 3:

- A-four lane multi-use path, swales, widen south,
- B-four lane multi-use path, curb and gutter, widen south, and
- C-four lane multi-use path, curb and gutter, widen north.

There was some discussion on each alternative; environmental impacts, storm water and drainage, storm water treatment, etc.

Mr. Arnio reviewed attendee preferred alternatives from the public meeting. It was noted that while it is not statistically significant as only 23 recommendations were made, the results are:

- Segment 1 - no build
- Segment 2 - no build, and
- Segment 3 - Alternative B

It was also noted that with a no build for segments 1 and 2 rain has an impact on the environment.

Ballots to vote on preferred alternative were given to the CAC. Members reviewed aerial photos and discussed alternatives before voting. The final results approved by the CAC were:

- Segment 1-Alternative A,
- Segment 2-Alternative A, and
- Segment 3-Alternative A

A CAC member noted that Alternative D (no build) for Segments 1 and 2 should be the County Commission's choice.

D. Workshop #1 with County Commissioners

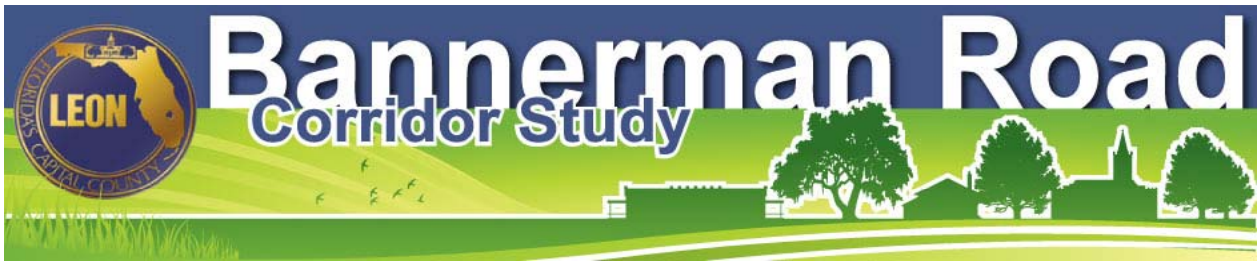
It was reported that the tentative date for the workshop with County Commissioners is August 23, 2011. It was noted that CAC members should be ready to present the preferred alternative and project progress to date. It was announced that all CAC members should be in attendance.

IV. Next Meeting

The next meeting was proposed for Thursday, July 21, 2011, at the Bannerman School House. The motion was approved.

V. Adjournment

Ms. Joanie Trotman adjourned the meeting at 7:00 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:



June 7, 2011 - Bannerman Road Community Advisory Committee Meeting
- Voting Results for Preferred Alternative -

Segment 1	Ms. Heggins	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	**Preferred**
Preferred	B	B	A	A	***A**	D	A	**A**
A	3	2	1	1	**1*	3	1	
B	2	1	2	2	3	2	2	
C	4	3	3	3	4	4	3	
D	1	4	4	4	2	1	4	
Segment 2	Ms. Heggins	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	**Preferred**
Preferred	A	A	A	A	A	B	A	**A**
A	1	1	1	1	1	2	1	
B	3	2	2	2	3	1	2	
C	4	3	3	3	4	4	3	
D	2	4	4	4	2	3	4	
Segment 3	Ms. Heggins	Ms. Trotman	Mr. Mendez	Mr. Reichert	Mr. Breeze	Mr. Barkley	Mr. Peacock	**Preferred**
Preferred	A	B	D	A	A	A	A	**A**
A	1	2	2	1	1	1	1	
B	2	1	3	2	3	3	2	
C	3	3	4	3	4	4	3	
D	4	4	1	4	2	2	4	

- Vote Tallies -

Segment 1	1st place	2nd place	3rd place	4th place
A	4	1	2	0
B	1	5	1	0
C	0	0	4	3
D	2	1	0	4
Segment 2	1st place	2nd place	3rd place	4th place
A	6	1	0	0
B	1	4	2	0
C	0	0	4	3
D	0	2	1	4
Segment 3	1st place	2nd place	3rd place	4th place
A	5	2	0	0
B	1	3	3	0
C	0	0	4	3
D	1	2	0	4

*Mr. Breeze changed his vote on Segment 1 from "D" to "A" after discussion with the Group. This change created a majority vote in favor of "A" for Segment 1.

Bannerman Road Corridor Study

Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

Name: Winifred P. Heggins Date: 6/7/2011

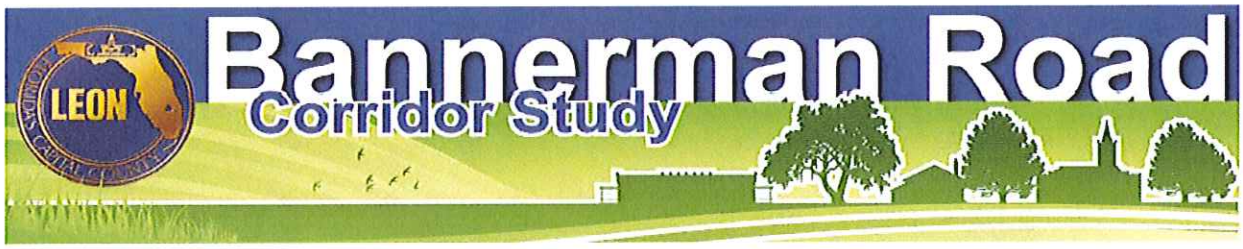
Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	3
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	4
D: No-Build	1

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	3
Alternative C: Add sidewalk to both sides	4
D: No-Build	2

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	1
Alternative B: Curb & Gutter, widening to the South	2
Alternative C: Curb & Gutter, widening to the North	3
D: No-Build	4

Comments:

All sidewalks/multi use paths on the north side



Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

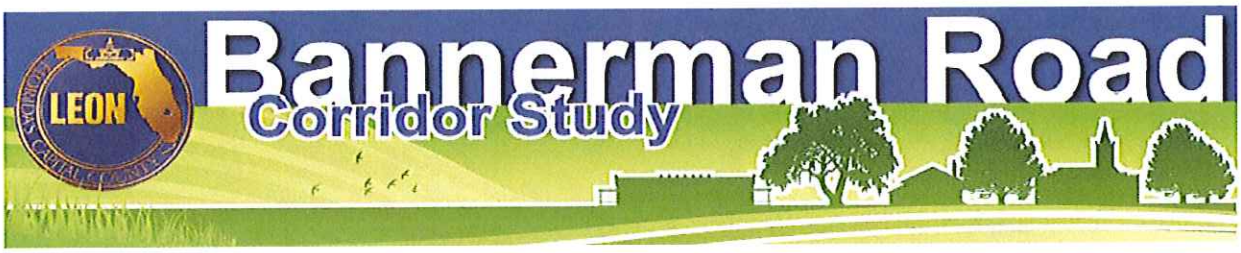
Name: Joanie Trotman Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	2
Alternative B: Add sidewalk to one-side	1
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	2
Alternative B: Curb & Gutter, widening to the South	1
Alternative C: Curb & Gutter, widening to the North	3
D: No-Build	4

Comments:



Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

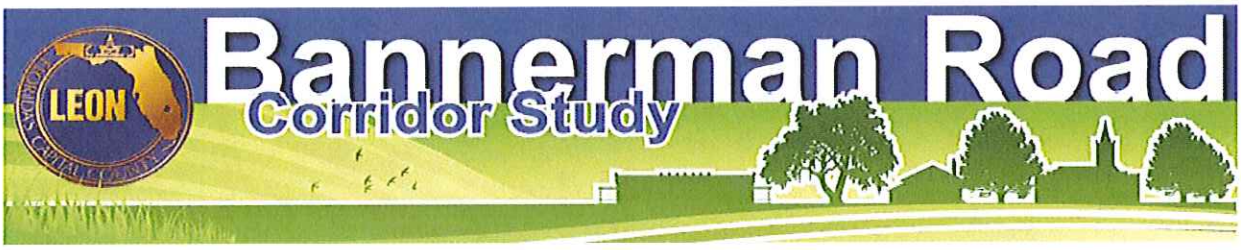
Name: Michael Mendez Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	2
Alternative B: Curb & Gutter, widening to the South	3
Alternative C: Curb & Gutter, widening to the North	4
D: No-Build	1

Comments:



Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

Name: MARK REICHERT Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	✓
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments:

Bannerman Road Corridor Study

Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

Name: Bruce Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	X

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	X
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	X
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments:

Bannerman Road Corridor Study

Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

Name: Joanie Thotman Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	
Alternative B: Add sidewalk to one-side	✓
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	
Alternative B: Curb & Gutter, widening to the South	✓
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments:

Bannerman Road Corridor Study

Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

Name: Winifred P. Heggins Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	
Alternative B: Add sidewalk to one-side	✓
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	✓
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments:

All sidewalks/multi-use paths on the north side

Bannerman Road Corridor Study

Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

Name: Michael Mendez Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	✓

Comments:

Bannerman Road Corridor Study

Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

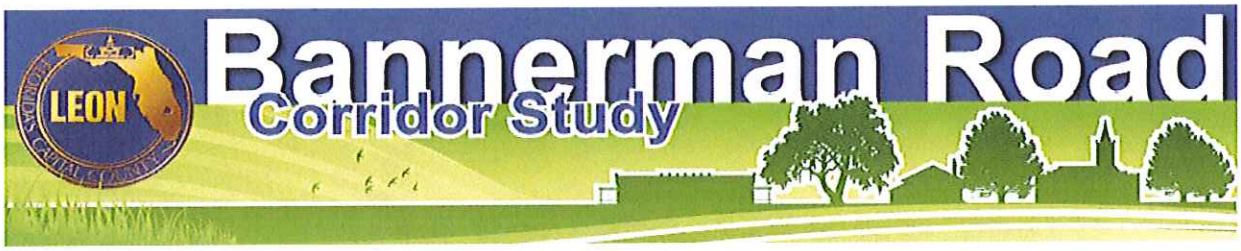
Name: Doug Barkley Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	X

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	
Alternative B: Add sidewalk to one-side	X
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	X
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments: Do not show bike path on South Side
It is either on North or not @ all.



Instruction: Please vote for your preferred Alternative. You may only select one Alternative for each Segment.

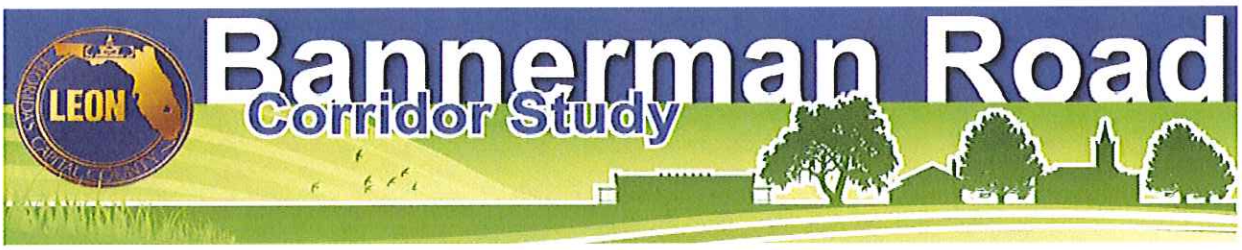
Name: Stan Peacock Date: 6/7/2011

Segment 1	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 2	Preferred Alternative
Alternative A: Add multi-use Path	✓
Alternative B: Add sidewalk to one-side	
Alternative C: Add sidewalk to both sides	
D: No-Build	

Segment 3	Preferred Alternative
Alternative A: Swales, widening to the South	✓
Alternative B: Curb & Gutter, widening to the South	
Alternative C: Curb & Gutter, widening to the North	
D: No-Build	

Comments:



Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

Name: MARK REICHERT Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	4

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	1
Alternative B: Curb & Gutter, widening to the South	2
Alternative C: Curb & Gutter, widening to the North	3
D: No-Build	4

Comments:

Bannerman Road Corridor Study

Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

Name: Doug Barkley Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	3
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	NO
D: No-Build	1

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	2
Alternative B: Add sidewalk to one-side	1
Alternative C: Add sidewalk to both sides	4
D: No-Build	3

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	1
Alternative B: Curb & Gutter, widening to the South	3
Alternative C: Curb & Gutter, widening to the North	4
D: No-Build	2

Comments: See other Sheet

Bannerman Road Corridor Study

Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

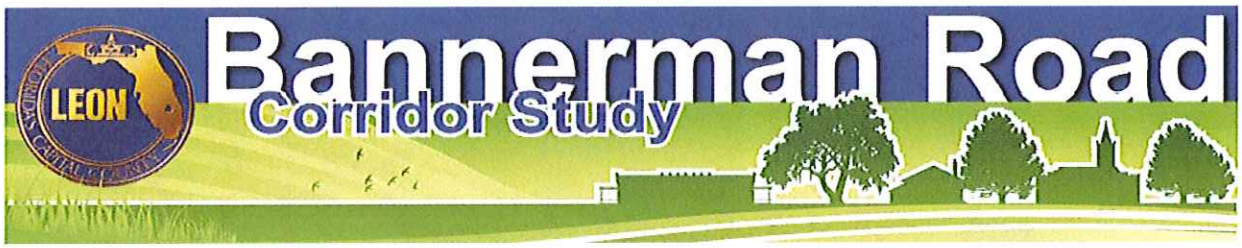
Name: Stan Peacock Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	2
Alternative C: Add sidewalk to both sides	3
D: No-Build	

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	1
Alternative B: Curb & Gutter, widening to the South	2
Alternative C: Curb & Gutter, widening to the North	3
D: No-Build	

Comments:



Instruction: Please rank the Alternatives for each Segment from one (1) through four (4).

Name: Breeze Date: 6/7/2011

Segment 1	Ranked Alternatives
Alternative A: Add multi-use Path	2
Alternative B: Add sidewalk to one-side	3
Alternative C: Add sidewalk to both sides	4
D: No-Build	1

Segment 2	Ranked Alternatives
Alternative A: Add multi-use Path	1
Alternative B: Add sidewalk to one-side	3
Alternative C: Add sidewalk to both sides	4
D: No-Build	2

Segment 3	Ranked Alternatives
Alternative A: Swales, widening to the South	1
Alternative B: Curb & Gutter, widening to the South	3/4
Alternative C: Curb & Gutter, widening to the North	3/4
D: No-Build	2

Comments:

IV. Next Meeting

The next meeting was proposed for Wednesday, June 8, 2010. Mr. George Su proposed moving to the meeting to Tuesday or Thursday. Mr. Parker proposed Tuesday, June 7, 2011. The motion was approved.

V. Adjournment

Mr. Brad Parker adjourned the meeting at 7:40 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

July 21, 2011
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the June 7, 2011 meeting minutes	*Chairman Trotman*
2.	**Old Business** None	*Chairman Trotman*
3.	**New Business**	*Nick Arnio, PE*
	Workshop with Board of County Commissioners Workshop waiver Board Agenda Item October 11th	
	Project Schedule 30% Plans Preliminary Engineering Report	*Nick Arnio, PE*
	Preliminary Engineering Report Existing Conditions Traffic Forecasts Draft Drainage Right-of-way Analysis (Preferred Alternative Only)	*Nick Arnio, PE*
	Public Involvement Update	*Gregory Bachman*
4.	**Proposed Next Meeting Date:** August 25, 2011 **Time:** 6pm to 8pm **Purpose:** Present Draft Preliminary Engineering Report	

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
July 21, 2011

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Mark E. Reichert

Staff Present:
Katherine G. Burke, PE, PMP, Director of Engineering Services, LCPW
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Megan Doherty, Planning Department
Greg Bachman, Barbara Greadington & Associates (BAG)
Doris Partridge, BAG
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
Charles Stratton
Douglas S. Weitzer
Gino Luzietti
Amber Skelly
Norma Kelly
Jack McKinnon
Pam McKinnon
Mac McKinnon
J. Buchanan
Geo and Phyllis Batchelor
Mike Zavolos
John Butler
Sedra Butler
Willie Kelly
Stanton Knight
Forronte Battles
Dennis Hatcher
Brenda Tanner
Scott Henderson
Brad Johnson

Susie Harris
Nageswara R. Tirumalasethy
Chris Cousill
G.F. Fyles
Wayne
Hubert Baxter
Jenna Eckland
Aubrey Post
Jason Knowles
Daphne Wyartt
Aubrey Post

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:10 p.m. on July 21, 2011, at the Bannerman Community Center. Meeting guests were asked to hold all questions until the end of the meeting. The minutes from the June 7, 2011, CAC meeting were submitted. Regarding Segments 1 and 2 and the environmental impact on Bannerman Road as reported in the June 7th minutes, Mr. Fred Breeze asked for clarification on the impact rain has on both Segments. Mr. Nick Arnio responded that on the current roadway there is no storm water treatment. If nothing is done to the roadway erosion will continue to occur. The minutes were approved as submitted.

II. Old Business

There was no old business.

III. New Business

A. Workshop with Board of County Commissioners

Mr. Arnio updated members on the status of the presentation to the Leon County Board of Commissioners.

Workshop Waiver

It was reported that the initial date of an August workshop with the Board of County Commissioners was not available. An alternative is to be placed as an agenda item on the Board of County Commissioner's meeting schedule, which will waive the need for a workshop.

Board Agenda Item October 11th

The Bannerman Road Corridor Study Project is on the October 11, 2011, agenda where the study's Segment Alternatives and the CAC Preferred Alternative will be presented.

B. Project Schedule

A slide detailing project schedule was presented. It was reported that the next milestone is the Preliminary Engineering Report. After the presentation of the CAC Preferred Alternative to the Board of County Commissioners, it is

anticipated that the Final Preliminary Engineering Report will be delivered in January or February 2012.

C. Preliminary Engineering Report

Mr. Arnio reviewed a brief history of the Corridor Segments, each alternative, and the CAC Preferred Alternatives, which are:

- Segment 1: Meridian Rd to Bull Headley Rd - Alternative A: multi use path,
- Segment 2: Bull Headley to Tekesta Dr - Alternative A: multi-use path, and
- Segment 3: Tekesta Dr to Thomasville Rd - Alternative A: four lane multi-use path, swales, widen south

Existing Conditions

It was noted that wildflowers were identified on the north side of Bannerman Road east of Quail Common Dr to Sable Chase. The existence of these wildflowers will be noted in the Preliminary Engineering Report so that every effort will be made to preserve them.

Traffic Forecasts

It was reported that over the past year, traffic patterns for each roadway segment was reviewed for forecasting traffic trends on the Bannerman Road Corridor.

Draft Drainage

In Segments 1 & 2, paved shoulders will require additional stormwater treatment and right-of-way.

Right-of-way (Preferred Alternative Only)

In the CAC Preferred Alternative A for Segments 1 and 2, paved shoulders were researched and would require additional drainage attenuation and additional right-of-way for stormwater retention ponds. Alternative C would take out many of the trees lining the roadway. The current location of the roadway in Segment 3, CAC Preferred Alternative A would need to remain in the same location.

It was noted that a draft Preliminary Engineering Report will be distributed to the CAC and County staff for the next CAC meeting.

D. Public Involvement Update

Mr. Greg Bachman reported that over the last 30 days, the website had 60 visits with visitors looking at 3-4 pages and spending over 4 minutes on the site. Website activity was higher in May and June due to the interest before and after the May 19, 2011, public meeting. In addition to the increase in names on the public mailing list, a new eLetter will advertise the next CAC meeting. Mr. Bachman reported the added feature of meeting materials on the website under the tab “Meeting Materials.”

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

July 21, 2011
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the June 7, 2011 meeting minutes	*Chairman Trotman*
2.	**Old Business** None	*Chairman Trotman*
3.	**New Business**	*Nick Arnio, PE*
	Workshop with Board of County Commissioners Workshop waiver Board Agenda Item October 11th	
	Project Schedule 30% Plans Preliminary Engineering Report	*Nick Arnio, PE*
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	Public Involvement Update	*Gregory Bachman*
4.	**Proposed Next Meeting Date:** August 25, 2011 **Time:** 6pm to 8pm **Purpose:** Present Draft Preliminary Engineering Report	

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
July 21, 2011

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Mark E. Reichert

Staff Present:
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Charles Wu, PE, Chief of Engineering Design, LCPW
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Megan Doherty, Planning Department
Greg Bachman, Barbara Greadington & Associates (BAG)
Doris Partridge, BAG
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
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Amber Skelly
Norma Kelly
Jack McKinnon
Pam McKinnon
Mac McKinnon
J. Buchanan
Geo and Phyllis Batchelor
Mike Zavolos
John Butler
Sedra Butler
Willie Kelly
Stanton Knight
Forronte Battles
Dennis Hatcher
Brenda Tanner
Scott Henderson
Brad Johnson

Susie Harris
Nageswara R. Tirumalasethy
Chris Cousill
G.F. Fyles
Wayne
Hubert Baxter
Jenna Eckland
Aubrey Post
Jason Knowles
Daphne Wyartt
Aubrey Post

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:10 p.m. on July 21, 2011, at the Bannerman Community Center. Meeting guests were asked to hold all questions until the end of the meeting. The minutes from the June 7, 2011, CAC meeting were submitted. Regarding Segments 1 and 2 and the environmental impact on Bannerman Road as reported in the June 7th minutes, Mr. Fred Breeze asked for clarification on the impact rain has on both Segments. Mr. Nick Arnio responded that on the current roadway there is no storm water treatment. If nothing is done to the roadway erosion will continue to occur. The minutes were approved as submitted.

II. Old Business

There was no old business.

III. New Business

A. Workshop with Board of County Commissioners

Mr. Arnio updated members on the status of the presentation to the Leon County Board of Commissioners.

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Mr. Arnio reviewed a brief history of the Corridor Segments, each alternative, and the CAC Preferred Alternatives, which are:

- Segment 1: Meridian Rd to Bull Headley Rd - Alternative A: multi use path,
- Segment 2: Bull Headley to Tekesta Dr - Alternative A: multi-use path, and
- Segment 3: Tekesta Dr to Thomasville Rd - Alternative A: four lane multi-use path, swales, widen south

Existing Conditions

It was noted that wildflowers were identified on the north side of Bannerman Road east of Quail Common Dr to Sable Chase. The existence of these wildflowers will be noted in the Preliminary Engineering Report so that every effort will be made to preserve them.

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It was reported that over the past year, traffic patterns for each roadway segment was reviewed for forecasting traffic trends on the Bannerman Road Corridor.

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In Segments 1 & 2, paved shoulders will require additional stormwater treatment and right-of-way.

Right-of-way (Preferred Alternative Only)

In the CAC Preferred Alternative A for Segments 1 and 2, paved shoulders were researched and would require additional drainage attenuation and additional right-of-way for stormwater retention ponds. Alternative C would take out many of the trees lining the roadway. The current location of the roadway in Segment 3, CAC Preferred Alternative A would need to remain in the same location.

It was noted that a draft Preliminary Engineering Report will be distributed to the CAC and County staff for the next CAC meeting.

D. Public Involvement Update

Mr. Greg Bachman reported that over the last 30 days, the website had 60 visits with visitors looking at 3-4 pages and spending over 4 minutes on the site. Website activity was higher in May and June due to the interest before and after the May 19, 2011, public meeting. In addition to the increase in names on the public mailing list, a new eLetter will advertise the next CAC meeting. Mr. Bachman reported the added feature of meeting materials on the website under the tab “Meeting Materials.”

IV. Next Meeting

The next meeting was proposed for September to review information for the October 11, 2011, Board of County Commissioners meeting. The options chosen are the week of September 15th and September 20th. Ms. Winifred Heggins proposed Primitive Baptist Church on Bannerman Road as a host for the next meeting. The next meeting date will be sent to members.

V. Adjournment

Ms. Joanie Trotman adjourned the meeting at 7:14 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Question and Answer
July 21, 2011
CAC Meeting

At the end of the meeting, guests were invited to ask project staff and/or CAC members questions regarding the Bannerman Road Corridor Study. Project staff and CAC members introduced themselves. The following are questions and comments.

Guest: What about noise barriers, are they being considered for properties?
Comment: A preliminary analysis for noise impacts was done considering traffic volume, speed and the types of vehicles on Bannerman. In reviewing the potential for noise impacts for Segment 3, Alternatives A & B have only a minor potential for impact. There is a potential impact for Alternative C. The noise analysis will be completed for the preferred alternative and delivered as part of this project. Noise walls will be considered, if required.

Guest: What are the criteria for turning access into Trinity Community Church?
Comment: Access Management is one of the considerations as part of a corridor study. This is dictated by the volume of turns at each driveway and intersection. The other primary consideration is the spacing of access points considering U-turns or median cut opportunities.

Guest: When were studies done for noise? Is the study available?
Comment: The studies were done Wednesdays or Thursdays during peak hours. The studies are in draft form but when they are finalized they will be available.

Guest: Why is there no landscape architect or urban planner on this project, only civil engineers and straight lines? Why not thinking outside the box? Why is this not a thesis project for the universities? Past projects have utilized the university students.

Guest: What is the main reason for this study?
Comment: The CRTPA 2030 long range plan identified Bannerman Road as being at capacity. A detailed traffic analysis and this Corridor Study was completed because of expected future traffic demand.

Guest: What kind of plan comes after the County Commission meeting?
Comment: Any comments made are taken into consideration. There are comment cards available; you can email commissioners and speak at commission meetings. If the County Commission approves the preferred alternative, 30% plans will be developed.

Guest: Why are 2 lanes expanding so far down? Will widening to 4 lanes to Tekesta increase traffic?
Comment: Under consideration currently is two lanes from Meridian to Tekesta, and 4 lanes from Tekesta to Thomasville. This area grows at 1% per year, but the traffic demand between Meridian and Tekesta is not there.

Guest: Is this for the benefit of Killearn Lakes? Why not 4 lane the whole way?
Comment: The roadway still fails if you take all turning traffic or Killearn Lakes residents off roadway, so the widening is needed for all users of Bannerman between Tekesta and Thomasville Road.

Guest: I submitted a list of 16 questions and have not received a response. I am concerned like a lot of people here today. There needs to be different forms of communication. The newspaper is not sufficient. Email communication with residents is needed. Is the matrix available?
Comment: The matrix is on the website and all information is in the matrix. Email addresses from comment cards are added to notifications. You can also sign up for email notices on the website: www.bannermanroad.com

Guest: Does the power company have input for design? The following needs to be addressed: evaluate landscaping, roadway lights, re-think roadway issues, cost analysis of committee.

Guest: Why have I not received anything in the mail about this study? The first notice I received was from an attorney. In Chicago, all residents are sent information in the mail.
Comment: The meetings are noticed in the newspaper, on roadway signs, on posters, and information is on the website.
Guest: That is not enough.

Guest: If you are going to keep the road will it be rebuilt or lanes added?
Comment: The existing roadway would remain in its current location, but the cross slope would change. Two lanes would be added in the widened section.

Guest: Will the CAC receive additional stormwater information on Segment 1 and 2?
Comment: One major component in the analysis of this project is stormwater requirements. Stormwater requirements were one of the primary factors that determined location of roadway in addition to the drainage system.

Guest: Seems like an ideal time to take people's property with values down 30-40%.
Comment: Keep in mind there is currently no funding allocated to complete this project, design or construction.

Guest: Is this project in a phase where it has the potential to be stopped?
Comment: At this time, the project is in the corridor study phase; the next phase is design. The next phase would include right-of-way acquisition. The final phase would be construction, which would take from 5-15 years, for all of those phases, if it were funded, which it is not.

Guest: I purchased my house in 2009 and I won't be able to sell the house with impending expansion. I am not in support of this project.

Guest: When will commercial data be available?
Comment: This is the Corridor Study and not the final design phase. It is not funded for 100% design, only 30% design. It is basically a concept.

Guest: At what phase does eminent domain kick in?
Comment: Purchasing property does not occur until the project is at the 90% phase, which is during the final design phase.

Guest: Has this project been taken into consideration in light of the other project near Another Broken Egg?
Comment: Yes, the traffic has been taken into consideration.

Guest: Is the CAC going to remedy all 3 segments' drainage issues?
Comment: Every effort will be made to remedy issues and not add to the problem. The County will look at existing issues after County looks at road design.

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

September 27, 2011
6:00 p.m. – 8:00 p.m.

1. **Call to Order** — *Chairman Trotman*

A. Agenda Modifications / Approval
B. Approval of the July 21, 2011 meeting minutes

2. **Old Business** — *Chairman Trotman*

None

3. **New Business**

Nick Arnio, PE

Board of County Commissioners Agenda Item

Board Agenda Item October 11th
Materials to be presented
Elect CAC Representative

Nick Arnio, PE

Project Schedule

Draft Preliminary Engineering Report

Preliminary Engineering Report

Nick Arnio, PE

Existing Conditions
Traffic Characteristics
Drainage Design
Alternatives Analysis
Right-of-way Analysis (Preferred Alternative Only)
Public Involvement

4. **Proposed Next Meeting Date:** October 20, 2011

Time: 6pm to 8pm

Purpose: Report on the October 11, 2011 BOCC Meeting

Additional Instructions:

The meeting will be held at the **New Bethlehem Primitive Baptist Church**, 2230 Bannerman Raod, Tallahassee, FL 32312.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
September 27, 2011

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Doug Barkley, P.E.
Mark Menendez

Staff Present:
Katherine G. Burke, PE, PMP, Director of Engineering Services, LCPW
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Greg Bachman, Barbara Greadington & Associates (BAG)
Ruth Gant, BAG
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
Mike Zavalas
Willie Gaines
Chris Cowgill
Jack McKinnon
Brenda Tanner
Masekela Mandela
John Butler
Yvonne Nelson-Langley
Hans Van Tol
Daniel and Tammy Huba
Margot Palazesi
Forronte Battles
Carmen Trammell
Sedra Baxter
Marylee Robertson
Glenn Robertson

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:06 p.m. on September 27, 2011, at the New Bethlehem Primitive Baptist Church, 2230 Bannerman Road. The minutes from the July 21, 2011, CAC meeting were submitted. The minutes were approved as submitted.

II. Old Business

There was no old business.

III. New Business

A. Board of County Commissioners Agenda Item

Board Agenda Item October 11th

Mr. Nick Arnio reported that the CAC is on the agenda to present to the Leon County Board of Commissioners on October 11, 2011, at 3:00 p.m.

Materials to be Presented

Mr. Arnio reported that the CAC representative will present the Bannerman Road Corridor Study Segment Alternatives and the CAC Preferred Segment Alternatives to the County Commissioners.

Elect CAC Representative

Chairperson, Joanie Trotman was nominated as the CAC representative to present to the Board of County Commissioners. The nomination was approved. Along with the CAC representative, CAC members were encouraged to attend the meeting as well.

B. Preliminary Engineering Report

Mr. Arnio distributed the Preliminary Engineering Report to CAC members. He reviewed a brief history of the Corridor Segments, each alternative, and the CAC Preferred Alternatives, which are:

- Segment 1: Meridian Rd. to Bull Headley Rd. - Alternative A: multi use path,
- Segment 2: Bull Headley Rd. to Tekesta Dr. - Alternative A: multi-use path, and
- Segment 3: Tekesta Dr. to Thomasville Rd. - Alternative A: four lane, 10 foot multi-use path, swales, 5 foot paved shoulders

Mr. Arnio reported that the project is 75% completed and they are midway through the engineering plans. He added the Right-of-Way Analysis is in progress.

IV. Next Meeting

The next meeting was proposed for October 25, 2011, at 6:00 p.m.

V. Adjournment

Before adjournment, Chair, Joanie Trotman opened the floor for questions from the public. Attached are the questions and responses.

Ms. Joanie Trotman adjourned the meeting at 6:58 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Question and Answer

Jack McKinnon: How was the composition of the CAC obtained?
Response: The CAC representatives are appointed by the Leon County Commissioners. They live in the general area but do not have property on Bannerman Road; otherwise, this would create a conflict of interest.

Guest: Paved shoulders. What is the final outcome?
Response: Segment 3 will have 5 foot paved shoulders and 10 foot multi-use path, but Segments 1 and 2 will not have paved shoulders due to the excessive stormwater treatment that would be required with the additional impervious area.

Hans Van Tol: Why no bike lanes?
Response: There will be a north-side multi-use path for bikes and pedestrians. Segment 3 will also have 5 foot paved shoulders that will function as bike lanes.

Property Owner on Bannerman: Why widening to the north when there are fewer homes on the south? Property is depreciating and noise is increasing. The 60 decibel line is over my house. It is not right for the County to not think about the property owners. To sell my house, I would lose money. Why 4 lanes in the first place? This change will add more traffic from people traveling down Meridian and across Bannerman to Thomasville. Can you project costs?
Response: The alternative chosen for this area is the expansion on the south of Bannerman. FDOT has a noise threshold, which in this area has not been triggered. We will complete the right-of-way analysis to determine the cost impact to properties. Traffic forecasts project future growth for the area. The construction costs have been estimated for comparative purposes. A more detailed cost estimate will be completed when 30% plans are finalized. The project is not funded for future phases.

Guest: Concerned about noise. How about sound barriers?
Response: With future traffic growth and the widening of the road, noise levels will increase. A complete noise study will be finalized for the Preferred Alternative. This study will show where noise abatement will be warranted.

Summerbrook Resident: A lot has been done, but information is not available to people. Where are you with this plan? What will be presented? How aggressive is CAC in informing community?
Response: At the October 11, 2011, Board of County Commissioners meeting, the CAC presents recommendations and RS&H presents study findings. If approved by the Board of County Commissioners, the project moves on to complete the "30% plans." CAC meetings and public open houses are noticed to the public via fliers, posters, newspaper notices, etc. The CAC meetings give citizens the opportunity for input.

Guest: With Segment 3, does this impact more residences?
Response: Fourteen residences will be impacted.

Guest: When funded, Alternative A in Segment 3 will impact my property. What can I do to put my opinion out? Can I slow the process down?
Response: The CAC speaks to the Board of County Commissioners on behalf of the citizens. You can also email the County Commissioners with your comments or concerns.

Guest: How will you come up with cost of purchasing property?
Response: This is completed by a right-of-way consultant that specializes in this phase of roadway construction. When the time comes to acquire right-of-way, a fair price will be negotiated for any property required for the improvements.

Guest: How many of these plans actually get built?
Response: If rolled into property sales tax, and 5-10 years for construction, it would be at least 5 years to get it done if we had all the funding.

Guest: How much thought is put into urban sprawl?
Response: This study looks at current facts and future land use.

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

October 25, 2011
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the September 27, 2011 meeting minutes	*Chairman Trotman*
2.	**Old Business** None	*Chairman Trotman*
3.	**New Business**	
	Board of County Commissioners Agenda Item Board Approved the CAC Preferred Alternative and Draft Preliminary Engineering Report	*Chairman Trotman*
	Project Schedule Revised schedule for 30% Plans and Final Engineering Report	*Nick Arnio, PE*
	Remaining Tasks Preliminary Engineering of Preferred Alternatives - Roadway Design - Drainage Design - Right-of-way Analysis - Noise Study Finalization Cost Estimate Updates Final Public Open House – February 2012 Complete Final Engineering Report	
4.	**Proposed Next Meeting Date:** February 7, 2012 **Time:** 6pm to 8pm **Purpose:** Public Open House to present Preferred Alternative	

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
October 25, 2011

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Doug Barkley, P.E.
Mark Mendez
Mark E. Reichert

Staff Present:
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Barbara Greadington, Barbara Greadington & Associates (BAG)
Ruth Gant, BAG
Lorene Hauser, BAG
Lauren Hauser, BAG

Others Present:
Aubrey Post
Chris Cougill
John Butler
Denise Knight

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:03 p.m. on October 25, 2011, at the Bradfordville Community Center. The minutes from the September 27, 2011, CAC meeting were submitted. A correction in the spelling of CAC member, Mark Mendez's name was noted and the minutes were approved as corrected.

II. Old Business

There was no old business.

III. New Business

A. Board of County Commissioners Agenda Item

Mr. Nick Arnio reported that the Leon County Board of County Commissioners voted 7 to 0 to approve the draft Preliminary Engineering Report and the Bannerman Road Corridor Alternatives, which are

- Segment 1: Meridian Rd. to Bull Headley Rd. - Alternative A: multi use path,
- Segment 2: Bull Headley Rd. to Tekesta Dr. - Alternative A: multi-use path, and
- Segment 3: Tekesta Dr. to Thomasville Rd. - Alternative A: four lane, 10 foot multi-use path, swales, 5 foot paved shoulders.

B. Project Schedule

Mr. Arnio reported that schedule for the 30% plans has been revised and work on the Preliminary Engineering Report is underway along with preparation for the final Open House.

C. Remaining Tasks

Mr. Arnio reported on the remaining tasks, which are:

- *Preliminary Engineering of Preferred Alternatives*
  - Roadway Design
  - Drainage Design
  - Right-of-Way Analysis
  - Noise Study Finalization

Mr. Arnio reported that the Right-of-Way Analysis will begin December 5, 2011, which will look at land needed. He added that initial surveying only studied land 50 feet out but additional surveying is currently being conducted that goes out 70 feet.

- *Cost Estimate Updates*
  Mr. Arnio reported that updated costs will be completed.

- *Final Public Open House – February 2012*
  CAC members were asked to vote on possible Open House dates: February 21, 2012 or February 23, 2012. February 23, 2012 was approved for the Open House. Members were reminded of the locations of the last two Open Houses, Bradfordville First Baptist Church and Canopy Roads Baptist Church. There was some discussion on location and format. The first Open House had an informal format with citizens reviewing aerial roadway maps and staff answering individual questions. The second Open House had a formal presentation, questions and answers, and aerial roadway maps. It was noted that the formal format did not afford equal audience participation with a few audience members monopolizing the time. It was suggested that a mixed format with a formal presentation and informal area around the aerial roadway maps would be better.

CAC members suggested contacting both churches to inquire on availability for the Open House.

CAC members emphasized the need for more public noticing. Members acknowledged that there is always someone who "did not know." There was discussion on the need to increase public noticing of the Open House. It was suggested that property owners directly on Bannerman Road should be notified of the Open House via mail out. Suggested public noticing included: website section for citizens to submit questions before the Open House, more advertising, notice in all home owners associations in the area, save-the-date cards. The CAC suggested that direct noticing of some property owners directly on Bannerman was needed as these property owners are not part of homeowners associations and in many cases their land has been a part of their family for generations

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- *Complete Final Engineering Report*
  Mr. Charles Wu reported that after the Open House, the Preliminary Engineering Report and a Memorandum of Understanding would be submitted to the CAC for review, signature, and then a final presentation to the Board of County Commissioners.

IV. Next Meeting

The next meeting was proposed for February 7, 2012, at 6:00 p.m.

V. Adjournment

Before adjournment, Chair, Joanie Trotman opened the floor for questions from the public. Attached are the questions and responses.

Ms. Joanie Trotman adjourned the meeting at 6:48 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Question and Answer

Guest: There are 20+ parcels affected could you notify those property owners?
Response: This can be handled on an individual basis.

Guest: Are homeowners notified when surveyors are coming out?
Response: Surveying of the north side where homeowner properties are is complete. The additional surveying will occur on the south side of Bannerman.

Guest: Are all measurements correct in parcel lines?
Response: All parcel lines come from property lines database. There is a process used to adjust them.

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

April 19, 2012
6:00 p.m. – 8:00 p.m.

1. **Call to Order** — *Chairman Trotman*

A. Agenda Modifications / Approval
B. Approval of the October 25, 2011 meeting minutes

2. **Old Business** — *Chairman Trotman*

None

3. **New Business**

Project Schedule

Complete final Public Meeting
Finalize Engineering Report

Final Public Open House

Date: May 3, 2012
Time: 6pm to 8pm
Place: Canopy Roads Baptist Church — *Nick Arnio, PE*

Advertisements

Webpage
Businesses
Churches
HOA's

Remaining Tasks

ROW Cost Estimate Updates
Final Public Open House – May 3, 2012
Complete Final Engineering Report

4. **Proposed Next Meeting Date:** Late May / Early June
Purpose: To Sign Memorandum of Understanding

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
April 19, 2012

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Doug Barkley, P.E.
Mark E. Reichert

Staff Present:
Katherine Burke, PE, Director Engineering Services, Leon County Public Works (LCPW)
Charles Wu, PE, Chief of Engineering Design, LCPW
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Lorene Hauser, Barbara Greadington & Associates (BAG)

Others Present:
George Batchelor
Phyllis Batchelor

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:10 p.m. on April 19, 2012, at the Bradfordville Community Center. Ms. Trotman thanked CAC members for their 1 ½ years of service on the committee. The minutes from the October 25, 2011, CAC meeting were submitted and approved.

II. Old Business

There was no old business.

III. New Business

A. Project Schedule

Mr. Nick Arnio reviewed the Board of County Commissioners (BOCC) approved Bannerman Road Corridor Preferred Alternatives, which are:

- Segment 1: Meridian Rd. to Bull Headley Rd. - Alternative A: multi-use path,
- Segment 2: Bull Headley Rd. to Tekesta Dr. - Alternative A: multi-use path, and
- Segment 3: Tekesta Dr. to Thomasville Rd. - Alternative A: four lanes, 10 foot multi-use path, swales, 5 foot paved shoulders.

Mr. Arnio reported that since the last CAC meeting additional surveys of the right-of-way were conducted, property owners were notified of the survey activities by letter, the right-of-way was established based on the 30% design, and the right-of-way cost estimate is ongoing.

B. Final Public Open House

Mr. Arnio reported that the final Public Open House will be on Thursday, May 3, 2012, at Canopy Road Baptist Church from 6:00 p.m. to 8:00 p.m.

C. Advertisements

Mr. Arnio presented the flyers, posters and postcards that were utilized to advertise the final Open House. He reported that the following locations received flyers, posters, and postcards:

Walgreens, Leon Co. Library, Bannerman Pet Care, Bradfordville Service, JFH Realty Company, Market Square Liquors, Capital City Bank, Publix, Walgreens, Bannerman Rd Nursery & Landscaping, Chick Fil A, La Hacienda II, Nail Bar, Pizza Factory, Killearn Lakes Taekwondo, Goodwill, Spriggs, Insurance One, La Sorelle Salon, Pinch-A-Penny, Starbucks, Subway, Wing Stop, and Charles E. Henry Masonic Lodge.

It was reported that notifications were emailed to the following homeowners associations: Killearn Lakes Plantation, Summerbroke, McBride Estates. In addition, area churches received flyers.

Mr. Arnio added that additional notification of the Open House will include two electronic signs, one near Quail Ridge and the other near Bull Headley, displayed from April 26 to May 3, 2012.

CAC members discussed the need for notification of property owners. It was noted that 240 properties on Bannerman Road will be affected. Mr. Mark Reichert made a motion that any property owner on Bannerman Road affected by the possibility of taking of land should receive notification by at least a door hanger. The motion was approved.

D. Remaining Tasks

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Mr. Arnio reported on the remaining tasks which are:

- Finalize the right-of-way analysis,
- Finalize 30% plans and cost estimates,
- Finalize noise analysis for Segment 3,
- Host final public open house,
- Collect and analyze public comments,
- Complete Final Engineering Report, and

- Present Final Engineering Report and Memorandum of Understanding to the BOCC

IV. Next Meeting

Members will be notified of the next meeting.

V. Adjournment

Before adjournment, Chair, Joanie Trotman opened the floor for questions from the public. Attached is the question and response.

Ms. Joanie Trotman adjourned the meeting at 6:34 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Question and Answer

Guest: How much property are you going to take because the surveyor came within 10 feet of my back door?
Response: The need to go further on property is to collect additional information for proper design.

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

May 22, 2012
6:00 p.m. – 8:00 p.m.

1.	**Call to Order** A. Agenda Modifications / Approval B. Approval of the September 19, 2012 meeting minutes	*Chairman Trotman*
2.	**Old Business** None	*Chairman Trotman*
3.	**New Business** **Final Public Open House** 73 Signed in 13 Comment Cards **CAC Member Letters to Leon County** Mr. Michael Mendez Mr. Doug Barkley **Final Engineering Report and 30% Preliminary Plans** **Final Engineer Report, CAC Cover Letter**	*Nick Arnio, PE*
4.	**Proposed Next Meeting Date:** June 12, 2012 **Purpose:** To present the Final Engineering Report to the County Commission for Approval	

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
May 22, 2012

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Doug Barkley, P.E.
Michael Mendez

Staff Present:
Charles Wu, PE, Chief of Engineering Design, Leon County Public Works (LCPW)
George Su, PE, Senior Design Engineer, LCPW
Drew Roark, PE, RS&H
Nick Arnio, PE, RS&H
Barbara Greadington, Barbara Greadington & Associates (BAG)
Lorene Hauser, BAG
Lauren Hauser, BAG

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:08 p.m. on May 22, 2012, at the Bradfordville Community Center. The minutes from the April 19, 2012, CAC meeting were submitted and approved.

II. Old Business

There was no old business.

III. New Business

A. Final Public Open House

Mr. Nick Arnio reported that the final Open House on May 3, 2012 had an attendance of 73 with 13 completing comment cards. He added that the comment cards were analyzed and the information forwarded to the CAC. Mr. Doug Barkley requested another copy. It was noted that 240 property owners along the corridor received letters regarding the Open House.

B. Final Engineer Report, CAC Cover Letter

CAC members reviewed the CAC cover letter, which will be included with the Final Engineering Report to the Board of County Commissioners (BOCC). It was noted that the letter has been revised several times. Members were asked to review and recommend changes, if needed. Members commented on the need for unity in the letter while acknowledging one member's disagreement on

Segment 3. A few changes were made to the letter. Mr. Arnio will incorporate changes to the cover letter and email to members for review and get signatures by June 10, 2012.

C. <u>CAC Member Letters to Leon County</u>

CAC members reviewed two letters written by members regarding the project .

Mr. Michael Mendez

Mr. Michael Mendez wrote a letter to the Board of County Commissioners detailing his disagreement with widening Segment 3. There was discussion on the inclusion of Mr. Mendez's letter in the Final Engineering Report. Suggestions were:

- Include Mr. Mendez's letter after the Executive Summary.
- Include a statement in the Executive Summary with CAC ranking and a "see attached" to include letter in appendices.
- Do not include the letter but add a statement that one CAC member did not agree and include all the areas not in agreement.
- Have Mr. Mendez address his letter to the CAC Chair and not to the BOCC. The cover letter on the Final Engineering Report would then include wording explaining his not signing the letter. Mr. Mendez's letter would be included in the minutes, which are a part of the Final Engineering Report.

A motion was made to include Mr. Mendez's letter in the minutes, but was tabled for further discussion. CAC members asked if previous County corridor studies submitted Final Engineering Reports where members declined to sign the cover letter. It was noted that previous studies did not have members who did not agree with project recommendations. A motion was made to include Mr. Mendez's letter after page 13 where the commitment recommendations are located. The motion was approved.

Mr. Doug Barkley

Mr. Doug Barkley wrote a letter to Mr. George Su detailing possible changes to the third paragraph where storm water treatment is called a small detail. Mr. Barkley added that the storm water portion of the project was a major detail in that a great deal of time was spent on storm water and getting the Leon County storm water department to compromise on engineering design was a major accomplishment. He further added this should be noted. A motion was made to note in the CAC cover letter the lack of participation by growth management in this project. The motion was approved.

D. <u>Final Engineering Report and 30% Preliminary Plans</u>

Mr. Arnio presented copies of the Final Engineering Report and 30% Preliminary Plans for review. He informed members that red notes are stamped on the 30% Plans, which read, "Preliminary, Subject to Change; Final Design will evaluate flooding issues at this location; Multi-use path location will change to minimize

right of way; Median openings will be further evaluated during Final Design Phase; and, Relocation of Reynolds Drive will be further analyzed in Final Design." These notes reiterate that the 30% Plans are preliminary and subject to change. He added that this is in answer to citizens' concerns about specific design changes, such as; median opens and right and left turn lanes, etc. Mr. Arnio stated that specific design details are in the final design phase and not the 30% Plan.

Mr. Fred Breeze suggested that future County Corridor Studies ensure direct communication with property owners along the corridor who may be directly impacted.

Mr. Arnio informed members that the Final Engineering Report will be presented to the BOCC on July 10, 2012, and encouraged all members to attend.

IV. Next Meeting

This was the final meeting of the Bannerman Road Corridor Study Citizens' Advisory Committee.

V. Adjournment

Chair, Ms. Joanie Trotman adjourned the meeting at 7:08 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

AGENDA

Citizen's Advisory Committee (CAC) Meeting for Bannerman Road Corridor Study

October 17, 2012
6:00 p.m. – 8:00 p.m.

1. Call to Order — *Chairman Trotman*

A. Agenda Modifications / Approval
B. Approval of the May 22, 2012 meeting minutes

2. Old Business — *Chairman Trotman*

None

3. New Business

CAC Acceptance Letter for Final Report to Board of County Commissioners (update)

30% Preliminary Plans (update) — *George Su, PE*

Reynolds Drive Access Management Study

Final Engineer Report (update)

4. Proposed Next Meeting Date: December 11, 2012
Purpose: To present the Final Engineering Report to the County Commission for Approval

Additional Instructions:
The meeting will be held at the Bradfordville Community Center (The Old School Building). The location is 3439 Bannerman Road.

Citizen's Advisory Committee (CAC)
for Bannerman Road Corridor Study
Meeting Minutes
October 17, 2012

CAC Members Present:
Joanie D. Trotman, Chair
Fred Breeze, Vice-Chair
Winifred Heggins
Stan Peacock
Doug Barkley, P.E.
Mark E. Reichert

Staff Present:
Charles Wu, PE, Chief of Engineering Design, Leon County Public Works (LCPW)
George Su, PE, Senior Design Engineer, LCPW
Dan Rigo, Leon County Attorney
Megan Doherty, Planning Department
Barbara Greadington, Barbara Greadington & Associates (BAG)
Lorene Hauser, BAG

Others Present:
Wayne Erato
Steve Bryant
Randy Harrell
Pat Harrell
Will Fixel

I. Call to order

Ms. Joanie Trotman called to order the meeting of the Citizen's Advisory Committee (CAC) at 6:00 p.m. on October 17, 2012, at the Bradfordville Community Center. The minutes from the May 22, 2012, CAC meeting were submitted and approved.

II. Old Business

There was no old business.

III. New Business

Mr. George Su explained that after the Final CAC meeting, an additional meeting of the CAC was necessary to present updated information.

A. CAC Acceptance Letter for Final Report to Board of County Commissioners (Update)

Mr. Su reported that after the Open House, May 3, 2012, additional work was done on the 30% Plans as a result of comments and concerns from the public.

He added that the CAC Acceptance Letter for the Final Report to the BOCC was revised and the new BOCC agenda date is December 11, 2012.

B. 30% Preliminary Plans (Update)

Mr. Su reviewed the Board of County Commissioners (BOCC) approved Bannerman Road Corridor Preferred Alternatives, which are:

- Segment 1: Meridian Rd. to Bull Headley Rd. - Alternative A: multi-use path on north side of the existing road,
- Segment 2: Bull Headley Rd. to Tekesta Dr. - Alternative A: multi-use path on the north side of the existing road, and
- Segment 3: Tekesta Dr. to Thomasville Rd. - Alternative A: widen to four lanes, widening to the south, 10 foot multi-use path on the north side of the road, swale drainage, and, 5 foot paved shoulders.

He presented slides detailing updates to the 30% Preliminary Plans, which include extending the grass median past McClure Drive and changes to median openings in front of Trinity Community Church, at Summit Ridge Drive, at Standing Pines Lane, at Duck Cove Road, and McBride Point.

C. Reynolds Drive Access Management Study

Mr. Su reported that an additional study of Reynolds Drive was conducted. He added that Reynolds Drive is a short distance from Tekesta Drive and does not allow for adequate turn lane design. He presented a summary of the four (4) design alternatives for this intersection. A CAC member raised the concerns about the additional study being over and above the 30% Plans, which is above the scope of the CAC. Mr. Su answered that this study is added value in reporting to the upcoming BOCC. He added that the CAC is under no obligation to make a decision on the study.

D. Final Engineering Report (Update)

Mr. Su noted that revised copies of the Final Engineering Report and 30% Preliminary Plans were delivered to CAC members for their review.

There was discussion on the added changes to the 30% Plans and the additional study conducted. CAC members discussed their concerns about adding the Reynolds Drive Access Management Study as an appendix to the Final Report. A motion was made to accept the additional minor changes to the 30% Plan and not accept changes to Segment 2: Reynolds Drive. The motion was approved. Mr. Su will disseminate the revised letter to CAC members.

IV. Next Meeting

This was the final meeting of the Bannerman Road Corridor Study Citizens' Advisory Committee.

V. Adjournment

Chair, Ms. Joanie Trotman adjourned the meeting at 7:03 p.m.
Minutes submitted by: Lorene Hauser
Minutes approved by:
Date approved:

Open House Comments

November 18, 2010

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Open House Comments
November 18, 2010

Comment Card #	Name	Interest	Comments		Response to Comment
1	Anonymous			Sound barriers for residences along Bannerman please	The Bannerman Road Corridor Study will include a noise study to determine the need for noise control features.
2	Zavolas	Michael	PO	My property borders Bannerman Road. It is much noisier today than it was 5/10 years ago. Something needs to be done about the noise like a sound barrier. I tried to sell my house several years ago and the main comment I got was that it was too noisy. I agree. I am awakened to sirens, "boom, boom" amplified music, and drag racing multiple times per week sometimes. I feel the vibrations in my house when the noise occurs sometimes. I also have flooding issues already. Water is coming up to my house in heavy rain situations. A hurricane will wipe me out and I was told by my insurance company that I do not qualify for flood insurance.	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The soil testing confirms that the natural soils have a low peculation rate and the design engineers are developing innovative concepts to meet permitting requirements and keep the roadway from flooding.
3	Anonymous			Get Started	
4	Gatlin	John	PO, FT	Would like to see a noise barrier as part of the design to protect the homes that back up to Bannerman Road	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area
5	Boyles	Scott	PO	I would like to see sidewalks from Summerbrooke to Thomasville Road. At the current time, you are tempting fate if you attempt to walk or ride a bike along the road. It would also be helpful if there were turn lanes into the McBride subdivisions.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor

Comment Card #	Name		Interest	Comments	Response to Comment
					Study. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes.
6	Huba	Daniel	PO	Concerns about road noise buffering for house right along Bannerman. I am on the corner of Bannerman and Summit Ridge Drive. Will any expansion bring cars closer to my property? Will this increase the noise level? What kind of noise buffering can be offered? I feel that the increased noise will depreciate my property value without any buffering. It is bad now and will worsen if traffic gets closer.	The Bannerman Road Corridor Study will include a noise study to determine the need for noise control features. If noise control features are reasonable and feasible they will be included in the improvements. The alternatives analysis will determine the impacts to residential homes, business properties, wetlands and other important features. The preferred alignment for the roadway has not been determined at this time.
7	Dickey	Freddie	PO		
8	Murray	Opa	PO		
9	Johnson-Evans	Enid	PO	Because of emergency traffic, the road really needs to be widened. Have seen cars having to go in ditch in order to get out of the way.	The Bannerman Road Corridor Study is assessing the current and future capacity needs of the corridor. As a part of the Corridor Study, a safety analysis will be conducted to assess the need for roadway shoulders.
10	Pless, Jr.	William	PO		
11	Evans	Donald	PO		
12	Wilbanks	Mark	FT	Turn lane from Bannerman right on to Tekesta would relieve much of the backup.	As a part of the Corridor Study, the study team is assessing the effect on capacity by

Comment Card #	Name		Interest	Comments	Response to Comment
					providing left and right turn lanes at key intersections.
13	Thornton	Donna	PO, FT	$1 million to do a study that the funding is years away makes no sense. Where is the storm water study? Why would water be controlled only on the south side of Bannerman? If this project goes forward please have sidewalks both sides, bike lanes, left turn lanes at all neighborhood entrances. Please sync lights and for goodness sake have the county enforce the speed limit, tailgating and illegal parking. Can you please consider bike lanes now - perhaps lives will be saved?	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
14	Richter	James	PO	To preserve rural nature of area suggest providing median with turn lanes and only 1 lane each direction until volume warrant the additional lanes. No curb and gutter - looks to "city." Bike lanes only if away from the road - not part of shoulder.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate

Comment Card #	Name		Interest	Comments	Response to Comment
					pedestrian and bicycle facilities are being considered as part of the Corridor Study.
15	Battles	Forronte	PO	Sound barriers - water run off -resident notification	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area. A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding. A project website has been established.
16	Duggan	Julie	PO,FT,O-bicyclist	We need a safe way for pedestrians and cyclists to get from Tekesta to Thomasville. Residents of south side lanes need safe way to turn left into our lanes, not u-turns, or blocking traffic. Bannerman Road needs beautification. It should be a lovely boulevard with trees and plantings, but an ugly straight highway that encourages speed. Bike lane must be separate from the roadway, otherwise isn't safe. Crest of hill between Standing Pines and Trinity Church needs to be shaven off so drivers exiting Standing Pines can see oncoming traffic.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes.
17	Abels	Robert	PO		

Comment Card #	Name		Interest	Comments	Response to Comment
18	Van Tol	Hans	O	Bike able community. Bicycle facilities are badly needed. Bike lanes are preferred if speed is low and there are many intersections. In sections with few intersections a multi-use path could be considered. At intersections, a raised path should be installed to force crossing motorists to slow down.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
19	Longewisch	Chris	PO	Multipath, raised path at intersections.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
20	Cotton	Russell	FT, O	I would like to recommend that Leon County redirect Bannerman Road at Meridian to cut off the corner and go south through Wildwood Church property. I think that the church and church members who own the necessary land might be willing to donate the land for road access. Feel free to call me at 850-545-8004.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The alternatives analysis will determine the impacts to residential homes, business properties, wetlands and other important features. The preferred alignment for the roadway has not been determined at this time. The use of the Wildwood Church property will be considered.

Comment Card #	Name		Interest	Comments	Response to Comment
21	Rhodes	Bessie	PO	Bicycle lane is an issue when bicyclists are using the roads slowing traffic as bicyclists dominate the roads down Meridian and also Bannerman road.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
22	Kinlaw	Greg	PO	This was advertised as a meeting! No a good start. I back to Bannerman - no 4 lane!	Thank you for attending. This meeting was intended to solicit the opinions of the residents along the Bannerman Corridor to provide direction at the onset of the study. A more formal meeting with a presentation will occur in the near future. Please visit the project website (www.bannermanroad.com) for updates. The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The alternatives analysis will determine the impacts to residential homes, business properties, wetlands and other important features.

Comment Card #	Name		Interest	Comments	Response to Comment
23	Buckley	Mike	PO	We get much noise from Bannerman 24 hours a day. I would like sound barriers placed between the road and the houses to the North. The trees used to block the noise but most have been cut. All probably will be cut during the widening. The value of our houses will decrease without these sound barriers. Please include them in your plans.	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area
24	Dickey	Rebecca D.	PO	A black resident of Bannerman Road needs to be a member of the CAC. I would like to meet with the current members and make sure our voices are heard.	
25	Sanchez	Victor	PO	Need sound barrier now! No reason to wait 10 years. Please install a traffic light at Quail Common and Bannerman before any casualty happens. Enforce speed limits and fine loud speaker blasting vehicles. Before widening Bannerman you must control the rain storm water problem created by the overdevelopment.	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area. A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding.
26	Heery, Sr.	Fred	PO	Need wb right turn lane now at Tekesta! In the interim, add a dedicated right turn lane west bound at Tekesta. Delay will be greatly reduced and safety increased as vehicles turning right have to slow to near stop in the through lane to make a right turn. If you add lane to Bannerman, still add right turn (wb) lane at Tekesta and if not the right through lane will become a defacto right turn lane in the evening, leaving only one through land wb her (if you 4-laned Bannerman) and lost of near miss lane changing from right lane to left lane for through vehicles.	The Bannerman Road Corridor Study will analyze the addition of a west bound right turn lane at Tekesta Drive. Turn lanes are an effective way of getting turning vehicles out of the through movement which adds capacity.

Comment Card #	Name		Interest	Comments	Response to Comment
				Thank you! Fred Heery, Sr, P.E., Traffic Engineer	
27	Williams	Marcus	PO	As a homeowner with property on Bannerman Road, I am interested in any project that would: 1. ease the current congestion issues and 2. make getting onto Bannerman from my driveway safer.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes.
28	Nelson-Langley	Yvonne	PO	I am disappointed to find out that the meeting is really not a meeting. I came here hoping to have questions answered. Instead I was asked to give my thoughts on how Bannerman Road should be widen without having any prior information. This meeting was not what it claimed to be.	Thank you for attending. This meeting was intended to solicit the opinions of the residents along the Bannerman Corridor to provide direction at the onset of the study. A more formal meeting with a presentation will occur in the near future. Please visit the project website (www.bannermanroad.com) for updates. The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to

Comment Card #	Name		Interest	Comments	Response to Comment
					the drainage within the area. The alternatives analysis will determine the impacts to residential homes, business properties, wetlands and other important features.
29	Pouliotte	Jeffrey	PO	In order to increase the level of services it is my understanding that the road will be widened to 2 lanes in either direction. We expect left hand turn lanes to access residential streets. (I live on McClure Drive). The timing of the light at Tekesta should be re-timed to create more time to make right hand turns from McClure Drive on Bannerman. The road should have landscaped medians, sidewalks, bike lanes, and noise walls adjacent to residential areas. Drainage should be improved to prevent flooding and the horizontal and vertical geometry of the roadway should be improved wherever possible. The bike lane should be separate from the roadway (similar to what is being done on Capital Circle southeast).	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding. Also, a noise study will be conducted to determine the need for noise control features.
30	Hall	Greg	PO	Recommend a curb and gutter cross section with sidewalks on both sides. Bike lanes are not very useful because it seems as though bikers don't stay on them. There appears to be drainage issues along some areas of Bannerman that need to be addressed. Additionally, some of the neighbors near the roadway already complain of noise problems. Mitigation for these should be considered and provided. A two lane facility with a median for turn lanes would provide relief for some of the backup that is created by turning vehicles, without creating	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding. Also, a noise

Comment Card #	Name		Interest	Comments	Response to Comment
				an environment (like 4 lanes would) that encourages higher speed traffic. The current speed limit should be maintained.	study will be conducted to determine the need for noise control features. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
31	Hodges	Kevin and Susan	PO, FT		
32	Mueller	David and Gail	PO, FT	It needs to be widened. It needs a bike lane. Shoulder would also be nice. The road would be a real problem if we had a hurricane or forest fire.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
33	Fykes	Mimi	PO	Would like sidewalks - get rid of the ditches - would like to see sound barriers - if not 4 lane pass Bull Headley would like to see split 2 lanes with median.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that

Comment Card #	Name		Interest	Comments	Response to Comment
					incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study. The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed, what noise control features would best suit the area A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding. The preferred stormwater treatment method has not been determined at this time.
34	Katz	Cody	PO		
35	John	Susie	PO		
36	Fykes	G.F.	PO	Do away with the ditches; install sidewalks.	The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study. A detailed stormwater analysis will be conducted to meet permitting requirements and keep the roadway from flooding. The preferred stormwater treatment method has not been determined at this time.
37	Sheridan	Steve	PO	Our house backs up to Bannerman Road - I am concerned about the road noise. Are you going to put noise reduction fencing up/barrier? Are you	The Bannerman Road Corridor Study will include a noise study to determine if noise control features are needed and if needed,

Comment Card #	Name		Interest	Comments	Response to Comment
				going to put sidewalks and bike lanes?	what noise control features would best suit the area. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
38	Baxley	Jim	PO, FT	1-Due to heavy traffic on Bannerman Road from numerous subdivisions that feed this road and exploding population in the northeast area - this project needs to be moved up on the County priority list - also because of reported flooding in that area. 2-Bannerman needs to be four-laned and bike lanes added. 3-Would like for County to ask and work with City and Talquin Electric to put the power lines under the ground at their expense if possible. Know that this is probably too expensive but lets take a look and ask! 4-Need turn lanes at appropriate locations along Bannerman Road.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study. Furthermore, utility conflicts will be identified and relocation options explored.

Comment Card #	Name		Interest	Comments	Response to Comment
39	Barnett	Joseph	PO, O-cyclist	RS&H representative was very courteous and informative. Main concern is drainage and encroachment on right-of-way at the Bull Headley intersection. Bike walk trails are desirable where sufficient land is available. Grassed sidewalks are preferable to curb and concrete.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
40	Nelson-Langley	Yvonne	PO, FT	I have lived in Summerbrooke since 1997. The surrounding community has grown by leaps and bounds. However, with this growth I have become very concerned over the traffic increase on Bannerman Road. The light at Tekesta and Meridian have been helpful. Yet Bannerman itself still does not seem safe for pedestrians. Is there a plan in place to widen the road? If so how will this impact the surrounding neighborhood?	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes. The County and Citizen's Advisory Committee understand that pedestrian and bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
41	Bishop	Al and Becky	PO	Pedestrian safety	The County and Citizen's Advisory Committee understand that pedestrian and

Comment Card #	Name		Interest	Comments	Response to Comment
					bicycle safety is a priority for many residents along the Bannerman Road Corridor. Alternative roadway designs that incorporate pedestrian and bicycle facilities are being considered as part of the Corridor Study.
42	Messer	Jim	PO		
43	Watson	David	PO	I look forward to a 4 lane divided roadway with turnouts that permit turns into neighborhoods without impeding traffic flow. The 4 lanes roadway should eventually run between Meridian and Thomasville Road. Understandably to be done in stages. Thanks for soliciting input.	The Bannerman Road Corridor Study is focusing on roadway capacity improvements as well as improvements to the drainage within the area. The addition of turn lanes at key intersections is being analyzed to increase the level of service, increase safety and to help move turning vehicles out of the travel lanes.

Open House Comments

May 19, 2011

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Open House Comments
May 19, 2011

Comment Card #	Name	Comments
1	J. Scott Henderson	• Make alternatives matrix available online • Classify segments 2 & 3 as urban, west as rural • Reduce travel lanes segment 2/3 to 11 ft each • Add bike lanes, segments 2 & 3 • Identify right turn left turn lanes at major intersections • Consolidate all power lines and support users to ?one side of road • Identify landscape standards. Restricted requirements • Include street lighting segments 2 &3 • Sidewalks both sides with bike lanes segments 2 &3 • Identify turn movements to be eliminated • Do geotechnical borings support swales do meet retention req. • Identify underground storm storage under trail-? • Combine swale (outside path) with roadside swale • Identify alt. row under underground drainage approach • Inventory and identify existing storm water issues in all segments
2	Daniel & Tammy Huba	We live right on the corner of Summit Ridge and Bannerman – concern about noise, concern that visibility of all traffic will cause our property value to depreciate
3	Hubert Baxter	Where is the study data located? What request form/Sunshine Law request must I file to acquire it? Why are cross sections so simplistic? The presented sections are very plain with no creativity demonstrated.
4	Rita C. Taylor	Turning the storm water will cause flooding in Killearn Lakes. Flooding will occur at the onset of construction. We will be dealing with flooding in residential areas. Why wasn't there a study done in the residential are to determine the impact of flooding caused by construction. I would like to have had a public meeting where questions and discussion are more open instead of one-on-one conversations.
5	Stephanie Allen	Regarding Segment 1: I would like to segment 1 alternative B. I have a problem with drainage, water flow on Blue Smoke and settle into a holding pond. With a drainage this will allow water to flow in a different direction which does not cause damage to the road. I f the county don't have funds to add sidewalks. I truly feel they need to make a drainage system for Segment 1.

Comment Card #	Name	Comments
6	Susan & Gary Schaffer	Putting a ditch on the Southside we feel will help the flow of water across Bannerman between Blue Smoke to Red Eagle. I feel Proposal C is the best solution for the safety of children going to and from school. The Southside is probably the best side of the road for improvements. Water runoff is on a lot of our minds our holding ponds are already inadequate.
7	Trish Thompson	Considering the cost of row acquisition and the low bike/pedestrian (anticipated) draw this project looks like a big waste of money west of Tekesta. The road was resurfaced last year, so resurfacing is unnecessary. Better to put lights that can be stop/go during peak, stop/yield on non-peak. *Comment card #2* After talking to staff segments A & B look like a waste of money. There is no retail draw west of Tekesta. Study projects low bike/pedestrian draw. East of Tekesta there are many retail destinations that would encourage bike pedestrian traffic not currently anticipated 1 & 2 no build 3 Alternative
8	Glenn &Marylee Robertson	1. We agree the project is really needed for Thomasville to Tekesta. 2. If priorities are considered, do Thomasville to Tekesta and not Meridian to Tekesta. 3. We hope the County Commission will make it a priority project for county and or state funding ASAP. 4. We appreciate the thoroughness of the county's public process 5. It might be useful to tell the Bannerman Project story in a way to let people realize the many benefits it brings to area residents! A good story!
9	Yolanda Boronell	No build - the traffic is a small price to pay for those two high traffic times. Most of the time, traffic is not a problem. Those are peak traffic times in all suburban areas.
10	Esther S. Kelly	1. Bannerman Road 4.6 will be four lanes all the way. 2. Drainage pond
11	Danessa Hayes-Boyd	Segment 3, alternative B
12	Ruby Roberson	
13	Greater Springhill MBC	I believe that Segment 3, alternative B would work best for all concerned on this project. Alterative A takes away too much property from the citizen's personal property. Alternative C takes an uneven

Comment Card #	Name	Comments
		approach. Please note: as long as this project has been in the planning process, this is the first notification of any meeting that members of Greater Springhill MBC has received. We received this notice by word of mouth. There hasn't been any type of mail correspondence received at this church. Please ensure that we be included the decision process.
14	Beverly H. Cresse	I live on Duck Cove at Lake McBride. I don't want run off water getting into our lake, plus al the septic tanks around the lakes and wells. We need to keep our lake and well water clean.
15	Susie Johnson	? Sidewalks out by us more concerned with traffic flow. And why aren't there going to be a middle turning lane for all side roads actually we need a middle lane from Meridian Road up to Bull Headley for turning p_____ for either left or right side road turns so why all this?
16	Donald & Enid Evans	The road needs to be at least three lanes with turning at major intersections. There is not way to get off highway when emergency vehicles are coming.
17	Cody Katz	No turning lanes why! Stupid Sidewalks stupid!
18	Bernard Cohen	If the project proceeds, alternative A or B is preferred. Not alternative C
19	Lynne Shelfer	I live on Bannerman. Noise and pollution already bothering me.
20	Joe Noble	A. No alternative for bike lane multi-use con____ Florida state law bike laws B. Utilities not present – could not answer question of additional area needed behind swale/storm water treatment or how would impact property owners C. County staff was not prepared to answer questions – preliminary plan? Looks like a lot of work and 3 options only.
21	Chris Caugill	Turn lane for McBride Road Noise from road (wall)
22	Brad Zak	I am a property owner on McClure Drive and my property runs up to Bannerman. I am very concerned about the noise. Where are funds coming from to pay for this project? I prefer Segment 3, Alternative C. This option takes less property.
23	Greg Hall	No preference: Segment 1, Alternate A – multiuse path important to have Segment 2, Alternate A– multiuse path important to have Segment 3, Alternate B – fewer residential and business impacts, curb and gutter will help control flooding issues.

Comment Card #	Name	Comments
		Sidewalks on both sides is over kill. One side will suffice. Multiuse path is important to have, to provide bike facilities while keeping them separated.
24	Harry O. Thomas	Will there be a turn lane at McBride Pointe?
25	Tania Pendrakis	I think any construction should include accommodations for cyclists. I support Alternate A. I am not a cyclist but prefer not to risk their safety by sharing a busy roadway with them. What about cross walks? Good marketing for meeting. Poor control and response to audience concerns.
26	Leroy Jonas	If project is not funded could safety improvement be considered i.e., turn lanes _____
27	Connie Bennett	I am most interested in Segment 3, plan A. I live directly on Bannerman and am very concerned about infringement of property and noise.
28	James Hatcher	I live in the Segment 1 area. I welcome alternative C. I currently have an unmaintained storm water ditch that flows from both sides of Bannerman across the back of my property. There is a constant amount of trash I am cleaning up every time it rains.
29	Jodie Cahoon	1. Prefer multi-use trail for segment 1 and 2 and most of segment 3, but sidewalks on both sides of roadway will be needed on east end of segment 3, near Thomasville Rd. 2. Do not want underground vault storm water management. 3. Intersection improvements, especially left turn movements are essential for segments 2 and 3.
30	Lula Banks	My preference for the Banner Road Corridor study is segment 1 alternative C, typical section to provide for overall road improvement –with two sidewalks, drainage where needed on both sides and appropriate drainage where needed. The entire road needs to be enhanced not merely one side. I live on the Southside of Bannerman Road! Add we want shoulders on both sides!
31	Heidi Jinkins	Wide path on 1 side of road
32	Reeves	Segment 1- No build option preferred. If build option select option C. Segment 2- Same as segment 1. Segment 3- No preference but definitely build out needed to widen road to 4 lanes. Don't see need for median in middle.
33	Ian C. White	Other than the concern for storm water runoff, would a center turn lane be a more viable option for segment 3? I live in the area affected by segment 2, but segment 3 is a portion I travel on every day and backs up constantly.
34	Mary Buchanan	Add traffic lights immediately! No runoff into Lake McBride

Comment Card #	Name	Comments
35	Evan Dussia	Why not widen the median in the 4 lane (Segment 3) to include storm water collection
36	C.H. Henry Lodge	Our basic concerns are how our property lines will be impacted. Then how will our property be impacted by water runoff and drainage.
37	Patricia Hayes	Segment 1- Alternative B Segment 2- Alternative B Segment 3- Alternative B
38	Jerry Zacker	Shame on Leon County for spending almost $1 million on such a non-essential project study. This is clearly a solution looking for a problem. Each day Bannerman experiences only about 3 to at most 4 hours of heavier than normal traffic. That means residents have an extra 10 or 15 minute delay in getting to their destination. So, we're going to burden the taxpayers with millions of dollars in obligation so a relatively few residents can get home a few minutes early? Get Real! There are much more important things to use our hard earned tax dollars on than this dream.
39	Rebecca D. Dickey	My personal desire is for improvement on Bannerman Road to include sidewalks. I am concerned about the amount of right of way that may be required to add the sidewalks since the North side will have the most impact. I have invested a lot of money in making my beautiful and appealing to both humans and animals. We have two entrances to our house and the east entrance was redone in 2010 (both are concrete driveways). My choice for my area is the multi-purpose path.
40	Lily Rook	A public meeting means public-2wanted and I expected to hear all attendees opinions.
41	Tim Williams	Alternative A or B. Not alternative C.
42	Bessie Rhodes	Save the wide bike lane Plan A.
43	Earl Rhodes	Favor wide bike lanes.
44	Hallie Bender	I would support any multiuse path.
45	Greater Springhill Missionary Baptist Church	Segment 3 Alt B seems to be the best for both sides (North & South) of Bannerman with a sidewalk only.
46	Kyle H. Nolan	This is a waste of funds. I do not want to see sidewalks eat up the tree line down Bannerman. This will cause housing values to drop for the people who live along the road. The four board members still remaining who voted to do this project will not get my vote next election. (Daily, Sauls, Akinyemi, Proctor) PUT THIS TO A PUBLIC VOTE! DO NOT SHOVE THIS DOWN OUR THROAT!
47	John & Carolyn Kwak	

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Open House Comments

May 3, 2012

Open House Comments
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Comment Card #	Name	Address	Interest	Comments	Response
1	Anonymous			Good job!	
2	Mark Bylar	8914 Hickory Woods Trail Tallahassee, FL 32312	Property Owner, Frequent Traveler		Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Bannerman Road Corridor Study will conclude after the Board of County Commissioners approves the Final Engineering Report and preliminary design. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
3	Jerry Zacker	9307 Carr Lane Aerie Tallahassee, FL 32312	Frequent Traveler	According to the cost estimate, the total cost for all three segments is about $30 million. More than 50% of this total cost is for acquiring right-of-way property. If you were to take a survey of the people who will lose a portion of their property in exchange for money, how many of them would think that is a fair deal and would support this project? As is typical with most Leon County road projects, this appears to be a solution looking for a problem.	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Study Team realizes that the proposed improvements may have a direct, negative affect to some homeowners and businesses adjacent to the corridor. The proposed roadway improvements in Segment 3 are being recommended to mitigate congestion and meet the level of service for the forecast year 2035. The addition of the multi-use path is to provide a safe route along Bannerman Road for both bicyclists and pedestrians. Throughout the entire Corridor Study, the Citizen Advisory Committee Members, County Staff, and the Consultant have been conscientious of any impact to the adjacent properties while trying to minimize the cost for improvements. Again, your input to this corridor study is

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Comment Card #	Name	Address	Interest	Comments	Response
					greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
4	James & Marsha Morrison	7043 Duck Cove Road Tallahassee, FL 32312	Property Owner	Why have to buy property on the south when there is an ample easement on the north side? We live on Duck Cove Road – no need to turn lane there, it's a small lane…and no turn lane into McBride Hills?	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Study Team analyzed alternatives that widen the roadway to the north and to the south within Segment 3. The Preferred Alternative widens the road to the south with the addition of a linear stormwater retention area and multi-use path on the north side of the road. The stormwater facility and the multi-use path use much of the existing Killearn Lakes HOA common area that exists on the north side of the roadway. Additional right-of-way is necessary on the south side of the road to accommodate the additional two lanes. Turn lanes have been suggested at several connection points throughout Segment 3. Additional turn lane analysis will be completed during the Final Design phase of the project. Your comment to include a turn lane at McBride Hills instead of Duck Cove Road will be noted in the Final Engineering Report. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!

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Comment Card #	Name	Address	Interest	Comments	Response
5	George Batchelor	3431 Treaty Oak Trail Tallahassee, FL 32312	Property Owner	Noise level is NOT 12 noon. Bike path not needed. Need a noise barrier (fence or wall). Don't need frills on roadway. Just build road from 319 to Meridian PERIOD.	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. As a part of the Corridor Study, a comprehensive noise analysis was completed. As part of the noise study, noise readings were taken throughout Segment 3 to establish a baseline noise level and to calibrate the model used to predict future noise levels. The noise study determined that the forecasted noise level is not sufficient to warrant noise abatement. The Study Team also conducted a level of service analysis using forecasted traffic for the entire corridor. The traffic study showed that Bannerman Road from Meridian to Tekesta would not require widening to meet the adopted level of service in the year 2035. However, your comments to widen the roadway along the entire corridor will be included in the Final Engineering Report. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
6	Angie Wyche	2211 Bannerman Road, Tallahassee, FL 32312	Property Owner		Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Bannerman Road Corridor Study will conclude after the Board of County Commissioners approves the Final Engineering Report including Citizens

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Comment Card #	Name	Address	Interest	Comments	Response
					Advisory Committee's recommendations. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
7	Ben Brown	3228 Fawn Hill Trail Tallahassee, FL 32312	Property Owner	Sound Barrier	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. As a part of the Corridor Study, a comprehensive noise analysis was completed. As part of the noise study, noise readings were taken throughout Segment 3 to establish a baseline noise level and to calibrate the model used to predict future noise levels. The noise study determined that the forecasted noise level is not sufficient to warrant noise abatement. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
8	Jack & Trish Utermohle	7760 Maclean Road Tallahassee, FL 32312	Property Owner, Business Owner	When can you start, this is overdue.	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Study Team appreciates your enthusiasm and agrees that the widening of Segment 3 is an existing need with today's traffic volumes. However, the design, right-of-way acquisition, and construction phases of the Bannerman Road improvements are currently unfunded. As funding becomes

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Comment Card #	Name	Address	Interest	Comments	Response
					available, the improvements will be implemented and may be in phases. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
9	Rosemary Wood	4448 Camden Road Tallahassee, FL 32303	Frequent Traveler		Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Bannerman Road Corridor Study will conclude after the Board of County Commissioners approves the Final Engineering Report including the Citizens Advisory Committee's recommendations. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
10	RaSarah Browder	1640 West Jefferson Street Quincy, FL 32351	Other – utilities	Need to have both the City of Tallahassee and Talquin involved in discussions relating to where the utilities will be located in the early plans presented. Please contact Talquin for future discussions: Kevin Whyte, Engineer 850-627-7651 Quincy, Florida	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. Utility coordination will be a key element in the Final Design phase of the widening for Segment 3 and the implementation of the multi-use path in Segments 1 and 2. Talquin Electric and the City of Tallahassee will be contacted once Final Design has begun. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!

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May 3, 2012

Comment Card #	Name	Address	Interest	Comments	Response
11	Susan Brooks	3413 Treaty Oak Trail Tallahassee, FL 32312	Property Owner	My property is 3413 Treaty Oak Trail. I would like to know if under the preferred alternative any of my property will be taken. Thank you Susan Brooks brookssusan@rocketmail.com 850-893-5320	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The current Preferred Alternative that was approved by the Board of County Commissioners does not require your private property. However, it will require Killearn Lakes HOA common property that lies between your property and Bannerman Road. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
12	Rich Mospens	2317 Chester Court Tallahassee, FL 32312	Property Owner	I understand west of Tekesta will not be 4-laned at this time. When you begin that project, please consider re-routing Reyonlds to meet with Tekesta. It may or may not be the best for my neighbor(s) but in my opinion would provide the best east-west access for the subdivision of McBride Estates, etc.	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. Your comment will be taken under consideration when widening west of Tekesta. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
13	Jason Knowles	3523 Cherokee Ridge Trail Tallahassee, FL 32312	Property Owner	I will submit my comments via email.	Thank you for attending the Bannerman Road Open House and providing your concerns and comments to us. The Bannerman Road Corridor Study will conclude after the Board of County Commissioners approves the Final

Open House Comments
May 3, 2012

Comment Card #	Name	Address	Interest	Comments	Response
					Engineering Report including Citizens Advisory Committee's recommendations. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!
14	J. Scott Henderson		Property Owner	• Why no right turn lane at Sumit Ridge? • Why no left turn lane at McClure? • Please address results of storm water problems that exist today and solutions. The study committee committed to study and respond. What is the response? • Why has landscape median been eliminated on the west half of Segment 3? • Will all power lines on the south side of road be consolidated to the north? If not, why not? • Will intersection at Bull Headley be a traffic circle?	Thank you for coming to the Bannerman Road Open House and providing your concerns and comments to us. The Project Team would like to provide you with the following answers to your comments: **Comment:** • **Why no right turn lane at Summit Ridge?** o The Corridor Study process determines possible solutions to satisfy the purpose and need for the project. The detailed design, such as where turn lanes are located, landscaping concepts, and other details will be fully evaluated in the Final Design phase of the project. However, the study team has made several suggestions for turn lanes that may or may not be included in the Final Design. Your suggestion to add a right turn lane at Summit Ridge will be considered. • **Why no left turn lane at McClure?** o Your suggestion to add a left turn lane at

Comment Card #	Name	Address	Interest	Comments	Response
					McClure Drive will be considered and noted in the Final Engineering Report. • **Please address results of storm water problems that exist today and solutions. The study committee committed to study and respond. What is the response?** o The flooding issues just east of Lantern Light Lane were identified and possible solutions within the Bannerman Road Corridor were not feasible. The Preferred Alternative did not recommend roadway improvements within this Segment. Additional stormwater enhancements and flooding mitigation will be explored during the Final Engineering phase of the multi-use path. • **Why has landscape median been eliminated on the west half of Segment 3?** o Segment 3 is the only segment that requires 4-laning. West of Tekesta remains as a 2-lane facility. Due to the geometric requirements to maintain a smooth transition between the 4-lane and 2-lane segments, the vegetated median near Tekesta has been

Open House Comments
May 3, 2012

Comment Card #	Name	Address	Interest	Comments	Response
					eliminated. • **Will all power lines on the south side of road be consolidated to the north? If not, why not?** o Consolidation of overhead utilities will be addressed with Talquin Electric and the City of Tallahassee. If consolidation is the most cost effective solution, it will likely be the preferred method of utility relocation. • **Will intersection at Bull Headley be a traffic circle?** o The current Preferred Alternative does not call for additional roadway improvements at the Bull Headley intersection. In addition, a separate Intersection Improvement project at Bannerman Road and Bull Headley Road will be constructed this year. Again, your input to this corridor study is greatly appreciated. If you have any other questions or concerns, please let me know. Thanks!

E-Newsletters

Leon County
Board of County Commissioners
301 South Monroe Street, Tallahassee, Florida 32301
(850) 606-5302 www.leoncountyfl.gov

PUBLIC NOTICE

FOR IMMEDIATE RELEASE: September 26, 2011

CONTACT:
Public Information Office
(850) 606-5300

Bannerman Road Corridor Study
Citizens Advisory Committee Meets

WHO: Bannerman Road Corridor Study Citizen's Advisory Committee
WHAT: Corridor Study Committee Meeting and Public Meeting
WHEN: Tuesday, September 27, 2011, 6 p.m. – 8 p.m.
WHERE: New Bethlehem Primitive Baptist Church, 2230 Bannerman Rd.

For more information, please contact George Su at (850) 606-1500.

In accordance with the Americans with Disabilities Act and Section 286.26, Florida Statutes, persons needing a special accommodation to participate in this proceeding should contact Brandy Poulos with Leon County Public Works at 2280 Miccosukee Road, Tallahassee, Florida 32308 or PoulosB@leoncountyfl.gov, by written request by 1 p.m. on Tuesday, September 27. Telephone: (850) 606-1500; 1-800-955-8771 (TDD), or 1-800-955-8770 (Voice), or 711 via Florida Relay service.

Details about the Bannerman Road Corridor Study are available online at www.BannermanRoad.com. Residents may also subscribe to a free e-newsletter to stay up to date about the study's progress.

###

Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mcsv20.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Friday, January 21, 2011 3:04 PM
To: Arnio, Nicholi
Subject: Bannerman Road Corridor Study eLetter #2

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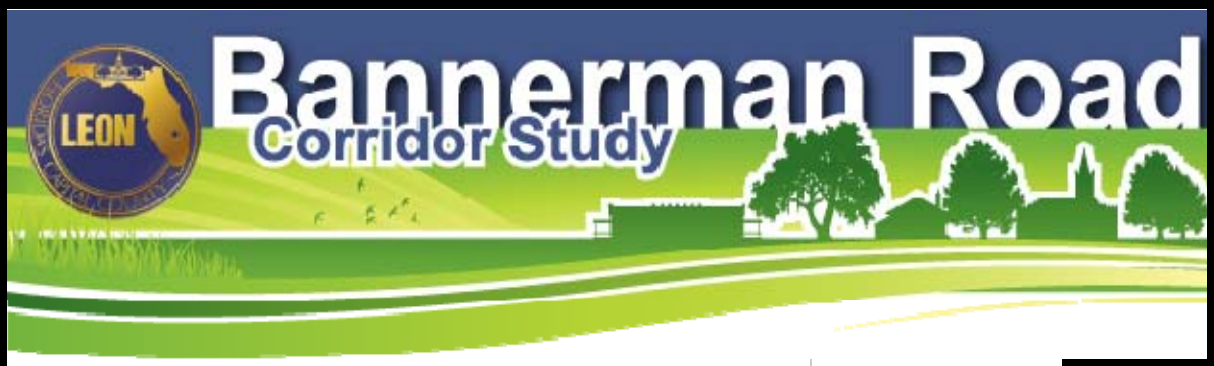


Citizens Advisory Committee January Meeting Update

01/21/2011

The Bannerman Road Corridor Study combines fact-gathering with engineering analysis that incorporates community concerns and interests. As you can see from the update below, the Study analyzes possible future stormwater flows. It also forecasts traffic trends, projects noise levels and suggests methods for traffic control, as well as evaluates many other potential impacts associated with the transportation improvement project. Combining all these facts and interests, the next phase of the Study is to develop a series of alternative methods for enhancing the Bannerman Road corridor. In this edition of the eLetter, we describe the most recent areas of study. And our Q&A section focuses on controlling the noise of Bannerman traffic.

Citizens Advisory Committee (CAC) Meeting Reviews Corridor Study Progress

The Citizens Advisory Committee (CAC) for the Bannerman Road Corridor Study met on January 12, 2011 at the Bradfordville Community Center. Members studied feedback from the first Open House of the Corridor Study, which was held on November 18, 2010 at the Bradfordville Baptist Church. CAC members reviewed and discussed the progress of the project. The Consultant Team provided details regarding the growth rate for the Corridor as well as stormwater treatment options. The CAC discussed the stormwater treatment solutions and offered suggestions which will be analyzed and presented at the next meeting of the CAC. The Consultant Team reviewed the website traffic and other public involvement strategies such as upcoming community events. The next CAC meeting is scheduled for February 9, 2011 at the Bradfordville Community Center.

Stormwater / Drainage:

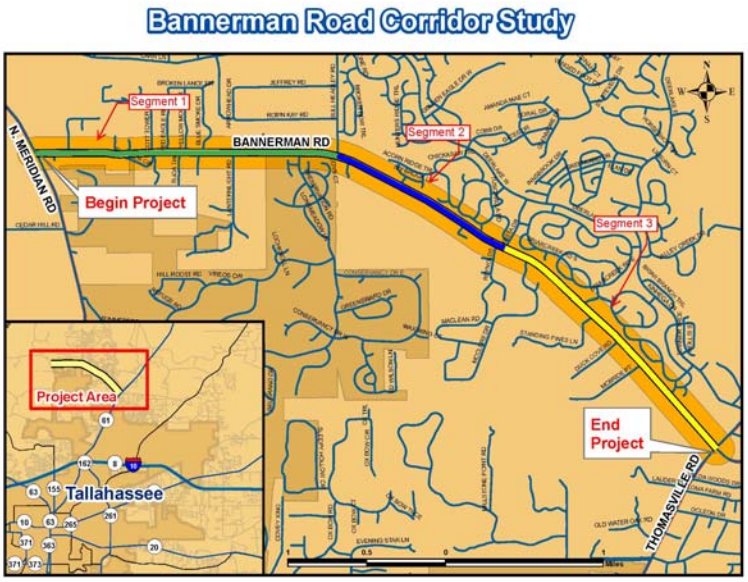
The Bannerman Road corridor traverses parts of 3 watersheds (WS); Lake Jackson, Lake Iamonia, and Lake Lafayette. In addition there are two areas of special concern, Lake McBride WS and the Bradfordville Study Area. Leon County and the Northwest Florida

Q: My property backs up to Bannerman Road. What can be done about the traffic noise?

A: A comprehensive noise evaluation study is being conducted as part of the Bannerman Road Corridor Study which will evaluate potential noise impacts from the improvements throughout the Bannerman Road corridor between Meridian Road and Thomasville Road. As part of the alternative improvements analyses for this Corridor Study, the anticipated noise levels corresponding to these improvements are compared to the Florida Department of Transportation (FDOT)

Water Management District have various stormwater treatment criteria in place that must be met to proceed with improvements within the corridor. The Consultant Team is investigating several alternative options to treat the stormwater. One alternative discussed at the January 12th, 2011 Citizen's Advisory Committee meeting involved treatment of the stormwater within the right-of-way through a system of gravel sub-layers and carefully selected topsoil that would allow stormwater to percolate into the gravel layer. Other options that were discussed include off-site retention which includes collecting the stormwater at curb inlets and piping it or pumping it to retention basins away from the roadway.

Traffic Analysis



The growth rate for the area surrounding Bannerman Road has been determined using a variety of methods including historic traffic trends, population and household projections, and the CRTPA (Capital Region Transportation Planning Agency) travel demand model. Population projections and household projections for the year 2035 were examined along with future travel demand patterns from the CRTPA's travel demand model. After examining the growth rates calculated using each of these methods, the accepted growth rate for the study area is 1% per year. Using this 1% growth rate, the future traffic demand for Segment 3 (Tekesta Drive to Thomasville Road) will require a 4-lane roadway to maintain the level of service standard. Segments 1 and 2 (from Meridian Road to Tekesta Drive) will not require additional travel lanes, but turn-lanes may be added to help maintain a continuous flow of traffic. Intersection improvements in Segments 1 and 2 and the feasibility of sidewalks and/or bicycle facilities will still be considered.

and Federal Highway Administration (FHWA) noise level criteria to determine whether or not they exceed the maximum allowable noise levels. If the noise levels exceed the threshold, then noise barriers will be evaluated from a cost and physical construction standpoint.

Coming Up

Citizens Advisory Committee Meeting Scheduled

There will be a Citizens Advisory Committee meeting February 9th at the Bradfordville Community Center. You are invited to attend and observe the discussions held. There will be comment cards available, but due to the format of the meeting, public comment can only be taken in written form. To stay informed on this and other upcoming meetings, visit www.bannermanroad.com for the most up-to-date information.

Our special mailing address for this project is:
Leon County - Bannerman Road Project
P. O. Box 7357
Tallahassee, Florida 32314

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Sent to Nicholi.Arnio@rsandh.com: unsubscribe | update profile | forward to a friend

Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mcsv152.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Thursday, March 10, 2011 10:00 AM
To: Arnio, Nicholi
Subject: Update

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Corridor Study Updates

03/10/2011

Happening Now

Prior to the Bannerman Road Corridor Study, Leon County Public Works identified a possible solution that would decrease the delay experienced at the intersection of Bannerman Road and Bull Headley. Leon County is in the final design stages of installing an east-bound left turn lane on Bannerman at Bull Headley.

Looking Ahead

Future traffic projections show that Bannerman Road will require additional travel lanes from Tekesta Drive to Thomasville Road (Segment 3) to provide sufficient capacity for the current and future expected demand. Additional turn-lanes may be considered west of Tekesta Drive, but adding additional travel lanes will not be required.

Walking/Biking Paths: Partial or Full-Length

Each amenity of roadway design requires looking at the landscape to see how the amenity will affect the corridor. Adding an amenity, such as a walking/biking path, although desirable, usually impacts roadway design as well as increasing the cost of the project. Adding a combined walking/biking path will mean acquiring land to establish the wider right-of-way and removal of mature trees to create a multi-use path. In addition, a paved path or sidewalk would create stormwater runoff which will require additional

Q: What is the Bannerman Road Citizens Advisory Committee?

A: The Bannerman Road Citizens Advisory Committee is made up of neighborhood residents. As work progresses on the corridor study, Leon County holds monthly meetings, facilitated by RS&H, for the Bannerman Road Citizens Advisory Committee. The Committee functions as your eyes and ears in reviewing the research and design process. Their role is to ask questions and to offer perspectives and opinions to the County and

stormwater retention areas. In summary, adding walking/biking paths to the full length of Bannerman Road could alter the landscape and would require additional right-of-way to build the paths and manage stormwater. All of these increase the cost of building the road.

Stormwater Management

Swales are designed to carry stormwater away from the roadway. Normally, swales are designed to not only carry stormwater, but to treat stormwater to remove pollutants prior to discharging into nearby ponds or wetlands. The first inch of runoff normally carries the highest levels of pollutants. Regulations governing the improvements to the parts of the Bannerman Road corridor require engineers to design a stormwater system to treat the first four inches of rain over impervious areas within the Bradfordville Study Area. For areas within the Lake Jackson Basin, the project is required to retain all stormwater runoff with no discharge allowed for up to a 50-year, 24-hour storm event. The additional treatment helps keep Lake Jackson, Lake McBride and the other lakes in the area clean and clear.

Why are swales and impervious surfaces key components of a discussion about the future of Bannerman Road? Because stormwater management regulations govern roadway design as much as the need to handle the traffic. For example, swales are the most natural and cost-effective means for transferring water that runs off the present and future Bannerman Road. That's the good news. The bad news is that the soil under and around Bannerman is mostly clay, and clay has very low permeability.

This means alternative plans for Bannerman Road will consider a combination of two ways of managing stormwater. Both methods are important and will be used together. One way to manage stormwater is to place a series of offsite holding ponds in areas lower than the road so that gravity can drain the stormwater to the ponds. To absorb the rest of the water -- instead of relying exclusively on more and bigger ponds -- alternatives will suggest removing the current adjacent soil and adding engineered soils for roadbed and swales. Engineered soils alternate layers of new, more absorbent soil and gravel in order to absorb stormwater at the four-inches-per-36 hours rate.

Therefore, one goal of the roadway alternatives design is to engineering team. While much of what must be done by the engineers is informed by traffic use data and stormwater regulation, all of the design proposals in response to data and regulation are within the scope of the committee's review and comment. Throughout the life of the study, the committee will continue to emphasize to the engineering team the issues that matter most to the communities surrounding the Bannerman Road Corridor.

Schedule

This study is planning for projected growth that is expected over the next 25 years. The next phases of the project; design, right-of-way acquisition, and construction are not currently funded.

Planning Horizon

If you are a 40-year-old resident of a Bannerman Road area community, the corridor study plans will reflect traffic and stormwater requirements as far out as 2035, when you are in your mid-60s. That's because a 25-year time frame is the standard metric for measuring potential traffic growth. Federal and State planning guidelines

maximize the use of carefully engineered and smartly constructed swales in order to minimize the number of holding ponds needed to manage the stormwater.

Noise and Good Looks

Traffic noise, along Bannerman Road, already raises concerns for some residents whose properties adjoin the Bannerman Road corridor. Some residents anticipate a higher noise level if the road is reconfigured to handle more traffic. At the same time, one of the charms of much of Bannerman Road is its semi-rural good looks. Call it the "pine aesthetic," the wooded environment that makes Bannerman Road attractive might be compromised with the addition of tall walls designed as a defense against traffic noise. Such walls are expensive to build, can create a sense of being in a tunnel, and might be a stark contrast to the pines and brush that they would replace.

But perhaps this is not an either/or dilemma. That's why the engineering alternatives will look at ways to shape the roadway corridor to minimize the increase in noise levels. Design alternatives may include using landscaping to reduce or even eliminate the need for walls. Finding the right combination of noise control and good looks will support the attractiveness of homes in the Bannerman Road corridor.

incorporate the 25-year standard, as does the Capital Region Transportation Planning Agency (formerly the Tallahassee-Leon County Metropolitan Planning Organization). The extended time horizon is important because whatever is determined to be the preferred alternative for the Bannerman Road Corridor, these improvements will have to last for at least 25 years. This is because these issues will not likely be addressed on this scale again for many years.

Corridor Study Terminology

Here are two terms that describe ways of looking at roadway plans.

Typical Section

The engineering drawings that you will see at the May 2011 public meeting will include "typical sections." These sections are simply what you would typically see when driving down the road. The range of vision usually includes the roadway, median areas, shoulders along the side of the roadway, and lighting.

Plan View

Also at the public meeting, you will see some engineering drawings in "plan views". Plan views show a bird's eye view of the entire corridor and will show the potential impacts for each alternative.

Public Meeting

The next meeting of the Citizens Advisory Committee will be held April 6, 2011, from 6:00 PM to 8:00 PM at the Bradfordville Community Center, 3439 Bannerman Road, Tallahassee, FL 32312.

Our special mailing address for this project is:
Leon County - Bannerman Road Project
P. O. Box 7357
Tallahassee, Florida 32314

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Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mcsv139.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Friday, May 13, 2011 8:49 AM
To: Arnio, Nicholi
Subject: Public Meeting

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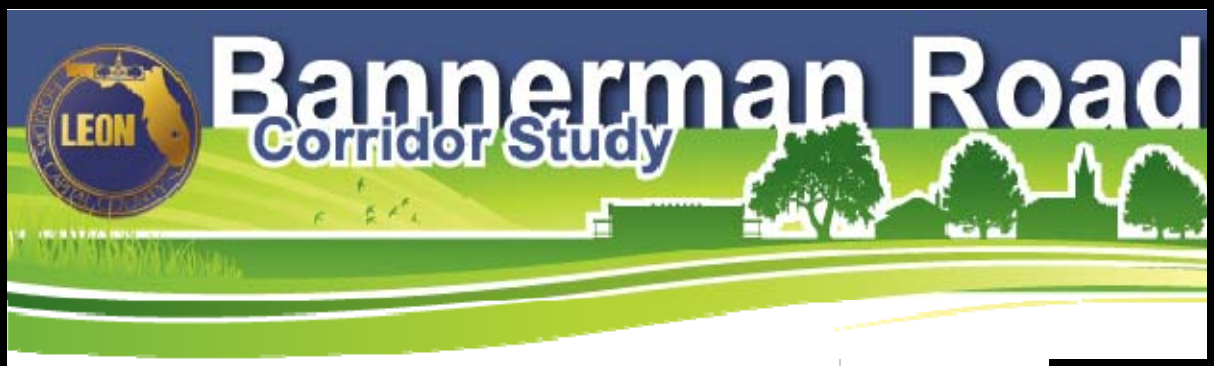

Public Meeting May 19th to Discuss Bannerman Road Corridor Study Alternative Roadway Plans

The Leon County Department of Public Works will host a public meeting to discuss its Bannerman Road Corridor Study on Thursday, May 19th, from 6:00 PM to 8:00 PM, at Canopy Roads Baptist Church, 925 Bannerman Road, east of Meridian Road.

In 2010 the Leon County Department of Public Works authorized the RS&H engineering consultant team to perform the Bannerman Road Corridor Study. The goal of the study is to produce a preferred alternative for the Bannerman Road corridor which, is approximately 4.6 miles long, between Thomasville Road and Meridian Road. The study evaluates the projected transportation needs of the residential and commercial sectors along and surrounding Bannerman Road.

At the May 19th public meeting, the Bannerman Road Corridor Study project team will unveil a series of roadway alternatives, some of which include a variation in the number of lanes, sidewalks, and multi-use paths. The Study Team consists of Leon County staff, RS&H team staff, and the Bannerman Road Citizens Advisory Committee members, appointed by the Leon County Commissioners.

The meeting will be in three parts. First, during an informal session from 6:00 to 6:30, the public will have time to scan aerial photos of alternative Bannerman Road corridor plans and talk one-on-one with Leon County public works engineers, RS&H team consulting engineers, and the Citizens Advisory Committee for the Bannerman Road study. Second, from 6:30 to 7:00 there will be a formal presentation that will review the Bannerman Road Corridor Study progress to date, and a description of roadway and stormwater solutions offered through each alternative design. The third part of the meeting, from 7:00 to 8:00, will allow the public additional one-on-one time to speak with the project team regarding follow-up questions, concerns and comments.

The alternatives will cover each of the three study segments of Bannerman Road. From west to

The next **Public Open House** for the Bannerman Road Corridor Study project team will be held Thursday, May 19, 2011, from 6:00 PM to 8:00 PM, at Canopy Roads Baptist Church, 925 Bannerman Road, Tallahassee, FL 32312.

east, the three segments are:

- (Segment 1) Meridian Road to Bull Headley Road
- (Segment 2) Bull Headley Road to Tekesta Drive
- (Segment 3) Tekesta Drive to the existing four-lane near Thomasville Road.

Specifically, the alternatives will identify needed improvements throughout the corridor such as the addition of travel lanes, additional turn-lanes or turn-lane storage, and bicycle and pedestrian facilities. They will include an evaluation of alternative alignments and their potential impacts along the corridor. Alternatives will be compared to the base-line or no-build alternative. Impacts associated with each alternative will be identified and quantified to most effectively avoid and minimize the impacts to homeowners, wetlands and other important features along the corridor.

There are three watersheds involved in the west segment, one in the middle segment, and two in the east segment. The study will inventory the existing drainage and stormwater management features. Once the existing stormwater facilities are cataloged, alternate stormwater treatment will be evaluated to conform to the existing stormwater management rules.

In addition, the study will develop detailed requirements for preliminary design, including existing and forecasted traffic conditions, right-of-way requirements, environmental impacts, and costs of the alignment options.
All alternatives developed will be efficient and effective transportation solutions that are sensitive to the immediate community, cost effective to taxpayers, and environmentally sound for generations to come. Non-viable alternatives will be identified and included in the documentation, including the reason for rejection. After the review of alternatives, a conceptual design for the selected alternative will be presented in another public meeting in the fall of this year. Currently, no funds have been budgeted or applied for construction of any alternative.

Details about the Bannerman Road Corridor Study are available at www.bannermanroad.com. Website visitors may subscribe to this free e-newsletter keeping the public up-to-date about the study progress.

Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mail34.us2.mcsv.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Wednesday, June 01, 2011 11:23 AM
To: Arnio, Nicholi
Subject: Alternatives Update

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Bannerman Road Corridor Study

Bannerman Road Corridor Study Alternatives Available

We have updated the Bannerman Road Corridor Study website to include the slide presentation, roadway alternative graphics and alternatives matrix that were made public at the May 19th meeting of the Leon County Bannerman Road Corridor Study. To go to the Bannerman Road website, click here.

06/01/2011

The next Citizens Advisory Committee meeting of the Bannerman Road Corridor Study project team will be held Tuesday, June 7, 2011, from 6:00 PM to 8:00 PM, at Trinity Community Church, 2285 Bannerman Road, Tallahassee, FL 32312.

Our special mailing address for this project is:
Leon County - Bannerman Road Project
P. O. Box 7357
Tallahassee, Florida 32314

Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mcsv82.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Monday, July 18, 2011 7:41 AM
To: Arnio, Nicholi
Subject: July CAC Meeting Reminder

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Bannerman Road Corridor Study

The next **Citizens Advisory Committee** meeting of the Bannerman Road Corridor Study project team will be held Thursday, July 21, 2011, from 6:00 PM to 8:00 PM, at the Bradfordville Community Center, 3439 Bannerman Road, Tallahassee, FL 32312.

Our special mailing address for this project is:
Leon County - Bannerman Road Project
P. O. Box 7357
Tallahassee, Florida 32314

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MailChimp

Arnio, Nicholi

From: Leon County - Bannerman Road Project [BannermanRoadProject=gmail.com@mail14.us1.mcsv.net] on behalf of Leon County - Bannerman Road Project [BannermanRoadProject@gmail.com]
Sent: Tuesday, September 20, 2011 3:22 PM
To: Arnio, Nicholi
Subject: September CAC Meeting Reminder

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09/20/2011

Bannerman Road Corridor Study

Citizens Advisory Committee

Meets Tuesday, September 27

The Bannerman Road Corridor Study Citizens Advisory Committee (CAC) will meet on Tuesday, September 27, 6:00 – 8:00 p.m., at the New Bethlehem Primitive Baptist Church, 2230 Bannerman Road, Tallahassee, FL 32312. The meeting is open to the public.

Our special mailing address for this project is:
Leon County - Bannerman Road Project
P. O. Box 7357
Tallahassee, Florida 32314

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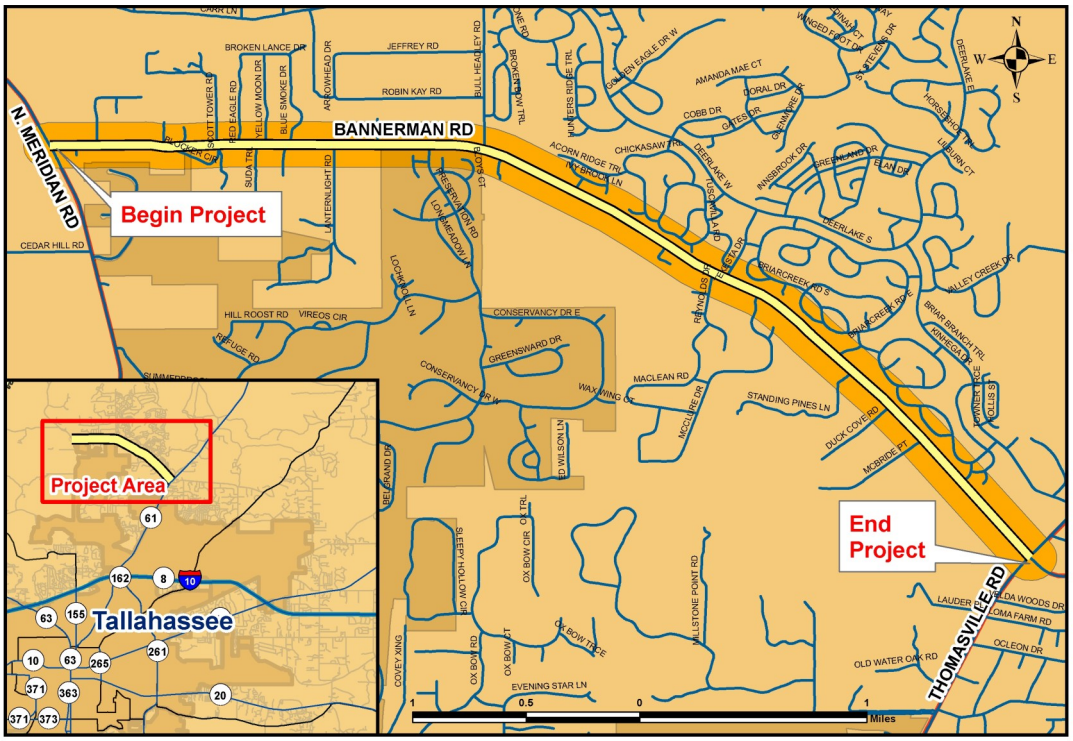
Meeting Notifications

Bannerman Road
Corridor Study

Designed to improve your quality of life

Project Overview

The Leon County Board of County Commissioners approved a corridor study of Bannerman Road to determine ways to better plan for improvements of the roadway. The Corridor Study encompasses 4.6 miles of Bannerman Road from Meridian Road to Thomasville Road. See the map below.



Meet the CAC

Serving the community on the Bannerman Road Citizens Advisory Committee (CAC) are area representatives:

Brad Parker, Chair
Joanie D. Trotman, Vice Chair
Douglas R. Barkley, PE
Mark E. Reichert
Fred Breeze
Tim Kinney
Michael Mendez

The CAC needs your input. Please contact them through email, website, or contact Leon County Public Works directly.

Email: BannermanRoad@LeonCountyFL.gov
Project website: www.bannermanroad.com

Open House

- Date: November 18, 2010
- Time: 6:00 pm - 8:00 pm
- Location: Bradfordville First Baptist Church
  6494 Thomasville Road
  Tallahassee, Florida

Contact
Leon County Public Works
George Su, PE
Phone: (850) 606-1544

Bannerman Road Corridor Study

Designed to improve your quality of life

Public Meeting

The Leon County Department of Public Works will host a public meeting to discuss the Bannerman Road Corridor Study.

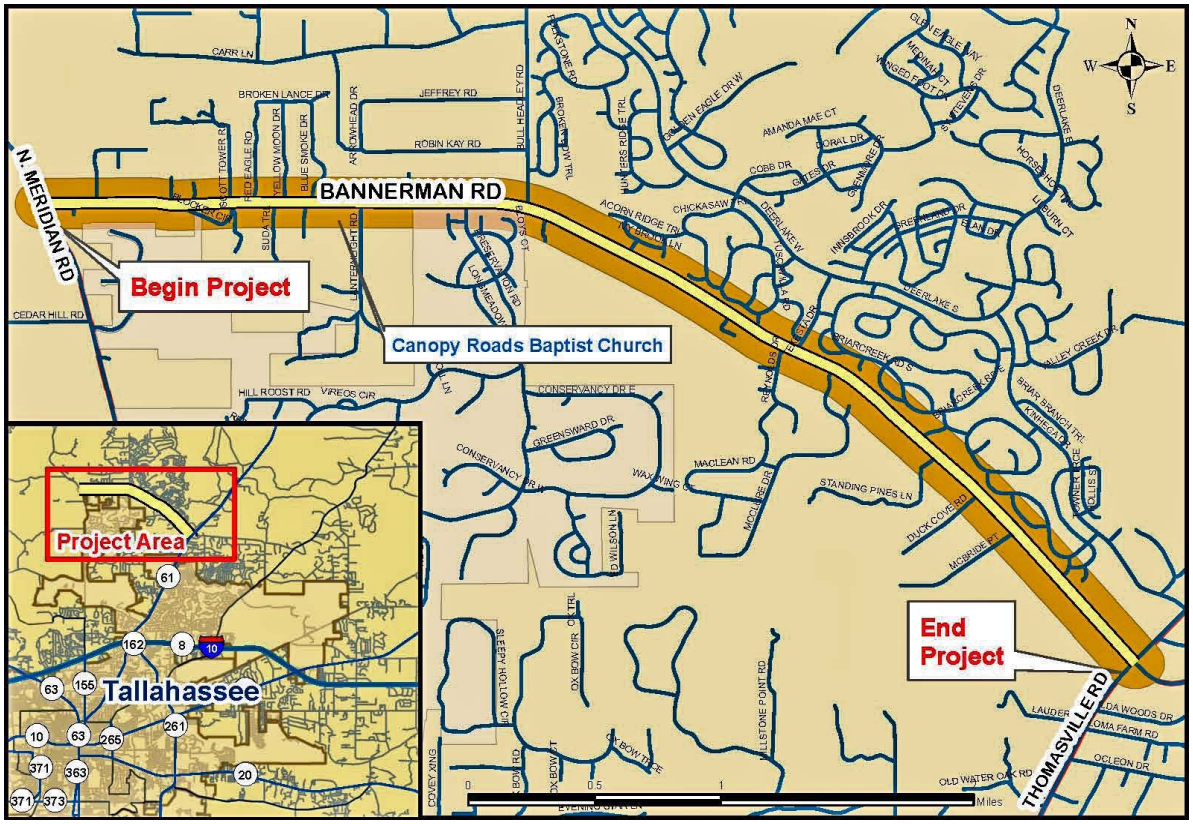
Thursday, May 19, 2011 ✦ 6:00 pm - 8:00 pm

Canopy Roads Baptist Church

925 Bannerman Road ✦ Tallahassee, Florida

Contact: Leon County Public Works
George Su, PE
Phone: (850) 606-1544
Project website: www.bannermanroad.com

Project Map



Newspaper Article

Public Meeting May 19 to Discuss
Bannerman Road Corridor Study Alternative Plans

The Leon County Department of Public Works will host a public meeting to discuss its Bannerman Road Corridor Study on Thursday, May 19th, from 6:00 PM to 8:00 PM, at Canopy Roads Baptist Church, 925 Bannerman Road, east of Meridian Road.

The goal of the study is to produce a preferred roadway alternative alignment for Bannerman Road, the approximately 4.6 miles between Thomasville Road and Meridian Road. It evaluates the projected transportation needs of the residential and commercial sectors along and surrounding Bannerman Road.

In 2010 the Leon County Department of Public Works authorized RS&H to perform the Bannerman Road Corridor Study. At the public meeting, the Bannerman Road Corridor Study project team consisting of Leon County staff, RS&H Team staff, and the Bannerman Road Citizens Advisory Committee members, appointed by the Leon County Commissioners, will unveil a series of alternatives.

The meeting will be in three parts. First, during an informal session from 6:00 to 6:30, the public will have time to scan large-scale aerial photos of alternative Bannerman corridor plans and talk one-on-one with Leon County public works engineers, RS&H Team consulting engineers, and the Citizens Advisory Committee for the Bannerman Road study. Second, from 6:30 to 7:00 there will be a formal presentation that will review the Bannerman Road Corridor Study progress to date, and a description of roadway and stormwater solutions offered through each alternative design. The third part of the meeting, from 7:00 to 8:00, will allow the public additional time to speak with the project team regarding follow-up questions, concerns and comments.

The alternate plans will cover each of the three study segments of Bannerman Road. From west to east, the three segments are:

- (Segment 1) Meridian Road to Bull Headley
- (Segment 2) Bull Headley to Tekesta
- (Segment 3) Tekesta to the existing four-lane near Thomasville Road.

Specifically, the alternate plans will identify needed improvements throughout the corridor such as the addition of travel lanes, additional turn-lanes or turn-lane storage, bicycle lanes and pedestrian facilities. They will include an evaluation of alternative alignments and their potential impacts along the corridor. Alternatives will be compared to the base-line or no-build alternative. Impacts associated with each alternative will be identified and quantified to most effectively avoid and minimize the impacts to homeowners, wetlands and other important features along the corridor.

There are three watersheds involved in the west segment, one in the middle segment, and two in the east segment. The study will inventory the existing drainage and stormwater management features. Once the existing stormwater facilities are cataloged, alternate stormwater treatment will be evaluated to conform to the existing stormwater management rules.

In addition, the study will develop detailed requirements for preliminary design, including existing and forecasted traffic conditions, right-of-way requirements, environmental impacts, and costs of the alignment options.

As the public meeting will demonstrate, evaluating alternatives will increase the probability of developing efficient and effective transportation solutions that are sensitive to the immediate community, cost effective to taxpayers, and environmentally sound for generations to come. The analysis of alternatives will identify any non-viable alternates and provide documentation for rejection. After the review of alternatives, a conceptual design for the selected alternate will be presented in another public meeting in the fall of this year. Currently, no funds have been budgeted or applied for in order to construct the plans.

Details about the Bannerman Road Corridor Study are available at www.bannermanroad.com. Website visitors may subscribe to a free e-newsletter keeping the public up-to-date about the study progress.

# # #

BANNERMAN ROAD CORRIDOR STUDY
"We want to hear from you"

The Leon County Board of County Commissioners approved a corridor study of Bannerman Road to determine ways to better plan for improvements of the roadway. The Corridor Study encompasses 4.6 miles of Bannerman Road from Meridian Road to Thomasville Road.

You are invited to participate in the Study by attending public meetings and providing your comments about improvements for the roadway. Please use the space provided below.

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Email: _____

Add me to the mailing list: ___Yes ___No

Which best describes your interest in the project:
_____Property Owner _____Business Owner _____Frequent Traveler

_____Other

Comments:

Please visit our website (www.bannermanroad.com) for up-to-date information about the project.

Appendix J

30% Roadway Plans

Components of Plans Set
Roadway Plans

BANNERMAN ROAD
FROM NORTH MERIDIAN ROAD TO THOMASVILLE ROAD
MULTILANE RECONSTRUCTION
MILLING & RESURFACING
MULTI-USE PATH

Commissioners:

Bill Proctor
District 1

Jane G. Sauls
District 2

John E. Dailey
District 3

Bryan Desloge
District 4

Kristin Dozier
District 5

Nick Maddox
At-Large

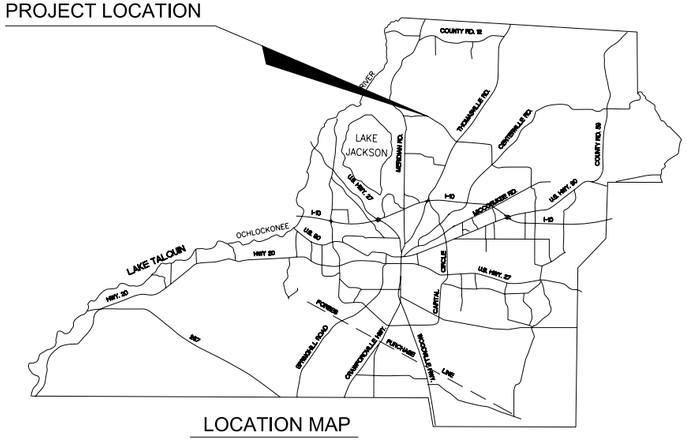
Akin Akinyemi
At-Large

Vincent S. Long
County Administrator

Herbert W. A. Thiele
County Attorney

Tony Park, P.E.
Public Works Director

PROJECT LOCATION



LOCATION MAP

Index of Roadway Plans

Sheet	Sheet Description
1	Key Sheet
2-3	Reference Points
4-7	Typical Sections
8-48	Roadway Plan & Profile Sheets
49-155	Roadway Cross Sections

30% PLANS

GOVERNING STANDARDS AND SPECIFICATIONS

Florida Department of Transportation (FDOT) Design Standards dated January 2012, and Standard Specifications For Road and Bridge Construction dated 2010, as amended by contract documents.

LEON COUNTY
Department of Public Works
Division of Engineering Services
Public Works Center
2280 Miccosukee Road, Tallahassee, FL 32308-5310
Ph: (850)606-1500 Fax: (850)606-1501
Web: http://www.leoncountyfl.gov

ENGINEER OF RECORD

_____
_____, P.E. #_____

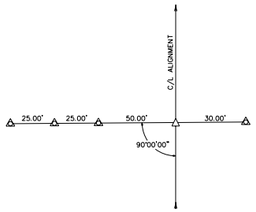
Date:_____

RS&H
Reynolds, Smith and Hills, Inc.
1701 Hermitage Boulevard, Suite 101
Tallahassee, Florida 32308
850-558-2800
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

GENERAL NOTES:

1. PROJECT BENCHMARK: NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) BM LEO 121 ELEV. 216.27
2. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
3. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND PROVIDE FOR PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION. UTILITIES ARE TO BE ADJUSTED BY OTHERS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL UTILITY COORDINATION. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH SUNSHINE STATE ONE CALL OF FLORIDA, INC. (1-800-432-4770, UNIVERSAL NUMBER 811) TWO BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS AT THE TELEPHONE NUMBERS LISTED BELOW TWO BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION.
4. ANY PUBLIC LAND CORNER OR BENCHMARK WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED BY CONTRACTOR. ANY BENCHMARKS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
5. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT SHALL REMAIN AND IF DISTURBED BE REPLACED IN KIND UNLESS OTHERWISE SHOWN IN THE PLANS.
6. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE CONSTRUCTION EFFORTS WITH OTHER CONTRACTORS THAT HAVE BEEN ISSUED A PERMIT WITHIN THE LIMITS OF THIS PROJECT. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL CONSTRUCTION SCHEDULES. ALL COST INCURRED BY THE CONTRACTOR FOR THE COORDINATION EFFORTS SHALL BE INCIDENTAL TO EXISTING PAY ITEMS. NO RIGHT-OF-WAY PLACEMENT PERMIT WILL BE REQUIRED WHEN THE UTILITIES RELOCATION PLANS ARE INCLUDED IN THE APPROVED CONSTRUCTION PLANS.
7. THE CONTRACTOR SHALL MAINTAIN AND KEEP STREET NAME IDENTIFICATION VISIBLE DURING CONSTRUCTION OPERATIONS, IN ORDER TO FACILITATE EMERGENCY VEHICLE TRAFFIC.
8. THE CONTRACTOR SHALL NOT BRING HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACT WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, WRITTEN PERMISSION FROM THE ENGINEER AND SUBMIT A MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH MATERIAL PROPOSED FOR USE. THE CONTRACTOR SHALL PROVIDE EACH HAZARDOUS MATERIAL PROPOSED FOR USE, BECAUSE STATE LAW DOES NOT TREAT PERTROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AND INTENDED FOR EQUIPMENT USE AS A HAZARDOUS MATERIAL, SUCH PRODUCTS DO NOT NEED A MATERIAL SAFTEY DATA SHEET (MSDS) SUBMITTAL.
9. ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE ENGINEER IS TO NOTIFY LEON COUNTY OF THE DISCOVERY. LEON COUNTY WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION AND REMEDIATION OF THE HAZARDOUS MATERIAL.
10. ALL AREAS OUTSIDE THE CONSTRUCTION LIMITS CHANGED OR DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST.
11. ALL LANES MUST BE REOPENED TO NORMAL TRAFFIC DURING AN EVACUATION NOTICE OF A HURRICANE OR OTHER CATASTROPHIC EVENTS AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVACUATION OR EVENTS AS DIRECTED BY THE ENGINEER.
12. ALL EXISTING SIGNS TO BE RELOCATED IN ACCORDANCE WITH FDOT STANDARD INDEX 17302 UNLESS OTHERWISE NOTED IN THE PLANS.
13. ALL EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE AT THE CONTRACTORS EXPENSE.
14. UTILITY AND COUNTY OWNED MANHOLES AND VALVE COVERS SHALL BE RAISED TO THE FINAL GRADE PRIOR TO PLACEMENT OF THE FRICTION COURSE.

C/L REFERENCE POINTS



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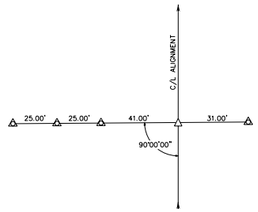

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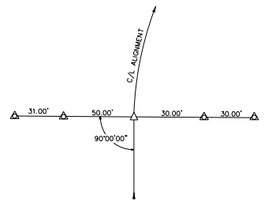

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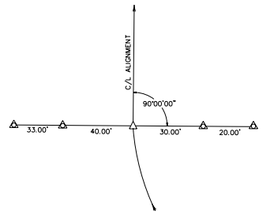

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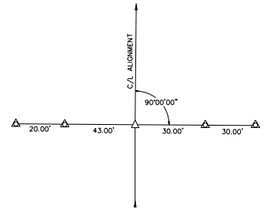

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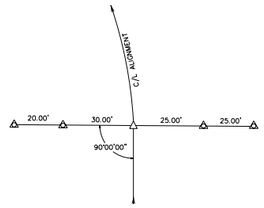

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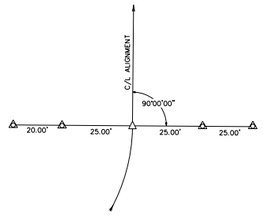

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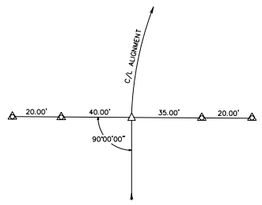

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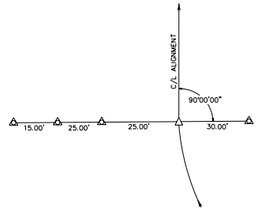

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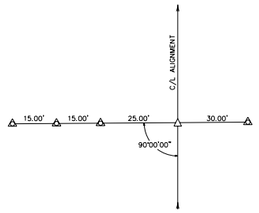

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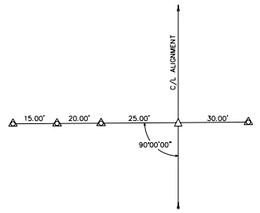

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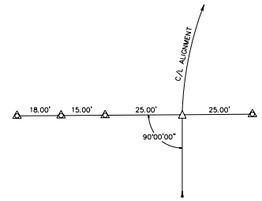

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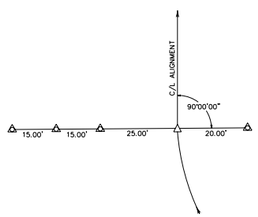

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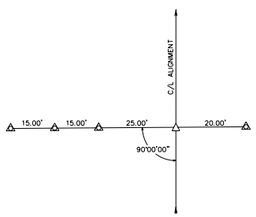

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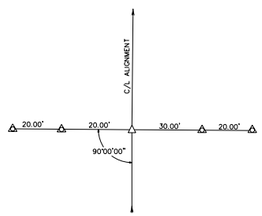

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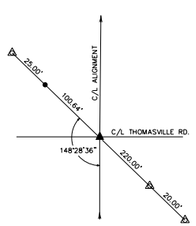


E.O.S. 243+78.72

C/L ALIGNMENT

C/L STATION	NORTHING (Y)	EASTING (X)	SCALE FACTOR
116+00 P.O.T.	576368.7166	2048067.9619	0.999974865
124+01.04 P.I.	575965.7065	2048760.2367	0.999974724
127+41.05 P.C.	575794.6494	2049054.0866	0.999974664
129+55.46 P.T.	575676.5730	2049232.9464	0.999974623
139+77.17 P.I.	575066.6552	2050052.6029	0.999974412
145+78.21 P.C.	574707.8448	2050534.7937	0.999974287
149+99.66 P.T.	574482.0321	2050890.1950	0.999974209
160+15.33 P.C.	574001.8887	2051785.2158	0.999974044
170+24.88 P.T.	573396.1411	2052587.8228	0.999973836
178+00 P.O.T.	572839.7029	2053127.4552	0.999973645
187+38.37 P.I.	572166.0768	2053780.7280	0.999973416
199+77.68 P.C.	571276.4003	2054643.5471	0.999973115
205+79.29 P.T.	570823.4064	2055038.9742	0.999972962
216+00 P.O.T.	570020.2592	2055668.8837	0.999972693
227+07.88 P.I.	569148.5368	2056352.5317	0.999972402
243+78.72 E.O.S.	567839.9094	2057391.4726	0.999971969

HORIZONTAL & VERTICAL CONTROL

DESIGNATION	C/L STATION	OFFSET	ELEV.	DESCRIPTION	NORTHING (Y)	EASTING (X)	LATITUDE	LONGITUDE	SCALE FACTOR
REL 4 TT	110+22.58	26.56' RT	241.574'	FOUND BRASS DISK IN CONCRETE MONUMENT	576636.2640	2047555.5815	30 35 07.19055	84 14 55.56896	0.999974959
A14	112+55.28	17.51' RT	234.081'	SET 5/8" IRON ROD AND CAP "LB.7043"	576527.0180	2047761.2383	30 35 06.10475	84 14 53.21892	0.99997492
TBM 11	120+61.32	22.25' LT	231.522'	FOUND R.R. SPIKE IN WPP	576155.8483	2048477.8381	30 35 02.41520	84 14 45.03022	0.99997479
A15	122+66.99	19.24' LT	225.905'	SET 5/8" IRON ROD AND CAP "LB.7043"	576049.7743	2048654.0741	30 35 01.36139	84 14 43.01675	0.999974753
LEO 120	127+20.61	44.03' LT	218.778'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	575842.9808	2049058.5736	30 34 59.30560	84 14 38.39450	0.999974681
A16	134+41.62	45.93' LT	217.815'	SET 5/8" IRON ROD AND CAP "LB.7043"	575423.2085	2049650.3796	30 34 55.13752	84 14 31.63501	0.999974535
A17	144+57.23	38.22' LT	210.081'	SET 5/8" IRON ROD AND CAP "LB.7043"	574810.7329	2050460.5615	30 34 49.05705	84 14 22.38252	0.999974323
A18	154+88.18	25.99' RT	204.212'	SET 5/8" IRON ROD AND CAP "LB.7043"	574228.2001	2051308.4040	30 34 43.27191	84 14 12.69873	0.999974122
A19: TLC 116	161+46.15	38.67' LT	223.579'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD AND CAP	573971.1616	2051918.7780	30 34 40.71376	84 14 05.72311	0.999974033
A20	169+05.35	40.22' LT	218.661'	SET 5/8" IRON ROD AND CAP "LB.7043"	573509.4437	2052530.8979	30 34 36.12957	84 13 58.73310	0.999973874
A21	175+70.37	33.94' RT	216.933'	SET 5/8" IRON ROD AND CAP "LB.7043"	572980.9194	2052943.2263	30 34 30.88868	84 13 54.03054	0.999973694
TBM 17	180+29.16	21.02' RT	212.179'	FOUND R.R. SPIKE IN WPP	572660.5611	2053271.9003	30 34 27.71012	84 13 50.27942	0.999973584
A22	185+55.64	28.30' LT	222.736'	SET 5/8" IRON ROD AND CAP "LB.7043"	572316.9528	2053673.8280	30 34 24.29969	84 13 45.69105	0.999973467
TBM 18	189+88.72	34.84' LT	216.609'	FOUND R.R. SPIKE IN WPP	572010.6165	2053980.0284	30 34 21.26038	84 13 42.19676	0.999973363
A23	193+56.29	18.74' RT	210.821'	SET 5/8" IRON ROD AND CAP "LB.7043"	571709.4533	2054197.4612	30 34 18.27434	84 13 39.71779	0.999973261
LEO 119	198+96.76	48.53' RT	214.032'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	571300.7377	2054552.3499	30 34 14.22049	84 13 35.66949	0.999973123
A24	202+57.28	25.91' LT	213.695'	SET 5/8" IRON ROD AND CAP "LB.7043"	571088.1830	2054852.6890	30 34 12.10949	84 13 32.23986	0.999973051
TBM 20	209+21.08	38.30' LT	217.483'	FOUND R.R. SPIKE IN WPP	570578.1209	2055280.0594	30 34 07.05071	84 13 27.36544	0.99997288
A25	214+62.51	25.69' LT	222.093'	SET 5/8" IRON ROD AND CAP "LB.7043"	570144.2983	2055604.2512	30 34 02.74897	84 13 23.66922	0.999972734
TBM 21	220+55.42	36.12' LT	223.923'	FOUND R.R. SPIKE IN WPP	569684.1924	2055978.3461	30 33 58.18585	84 13 19.40304	0.99997258
A26	226+66.20	34.36' LT	235.031'	SET 5/8" IRON ROD AND CAP "LB.7043"	569202.4960	2056353.8775	30 33 53.40896	84 13 15.12113	0.99997242
TBM 22	229+44.57	44.57' RT	235.796'	FOUND R.R. SPIKE IN WPP	568942.7664	2056474.1015	30 33 50.83524	84 13 13.75329	0.999972334
A27	236+31.47	50.60' RT	235.196'	SET 5/8" IRON ROD AND CAP "LB.7043"	568393.6915	2056887.2144	30 33 45.39047	84 13 09.04359	0.999972152
A28:TLC 1005	244+65.31	51.03' LT	222.334'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	567805.4712	2057485.8909	30 33 39.55363	84 13 02.21275	0.999971957

SURVEYOR'S NOTES:
1. ANY PROJECT CONTROL MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ADMINISTRATOR SHOULD NOTIFY THE COUNTY SURVEYOR, WITHOUT DELAY, BY TELEPHONE. (850) 606-1500.
2. THIS PROJECT IS BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM NAD 1983/07 HORIZONTAL DATUM. THE VERTICAL DATUM IS BASED ON NAVD 1988.
3. HORIZONTAL INFORMATION FOR BENCHMARKS IS TO BE USED FOR RECONNAISSANCE PURPOSES ONLY AND NOT FOR HORIZONTAL CONTROL.
4. THIS IS NOT A BOUNDARY SURVEY
5. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

LEGEND:
△ = SET PK NAIL & DISK "LB#7043"
▲ = SET 5/8" IRON ROD AND CAP "LB#7043"
● = FOUND ENCASED STEEL ROD
▲ = FOUND NAIL & DISK "NO ID"
P.C. = POINT OF CURVATURE
P.T. = POINT OF TANGENCY
P.C.C. = POINT OF COMPOUND CURVE
P.I. = POINT OF INTERSECTION
P.O.T. = POINT ON TANGENT
B.O.S. = BEGINNING OF SURVEY
E.O.S. = END OF SURVEY
STA = STATION
C/L CENTERLINE
LT = LEFT
RT = RIGHT
DWG. = DRAWING
L.B. = LICENSED BUSINESS
R.R. = RAILROAD
N.T.S. = NOT TO SCALE
WPP = WOOD POWER POLE

SURVEYOR'S CERTIFICATE:
I HEREBY CERTIFY, THAT AS OF THE DATE SHOWN BELOW, THIS BASELINE CONTROL SURVEY IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY RESPONSIBLE CHARGE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF MEETS THE MINIMUM TECHNICAL STANDARDS AS SET FORTH IN FLORIDA ADMINISTRATIVE CODE 5j-17.

PROJECT NAME: BANNERMAN ROAD (BASELINE CONTROL SURVEY) LEON COUNTY, FLORIDA

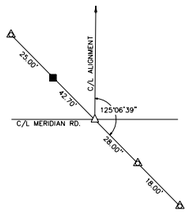
JOB NUMBER: 16714	F.B.: 10-104 PG.: 38-53	REVISION	DATE
DWG. NAME: CONTROL MAP	FIELD DATE: 8/02/10 TO 8/12/10		
PARTY CHIEF: JM & SK	DRAWN BY: J. PULICE		
SCALE: N.T.S.	CHECKED BY: J.MATTHEWS		

HSA CONSULTING GROUP INC.
Experience • Technology • Innovation
1648 METROPOLITAN CIRCLE
TALLAHASSEE, FLORIDA 32308
P: (850) 309-7510
F: (850) 309-0246

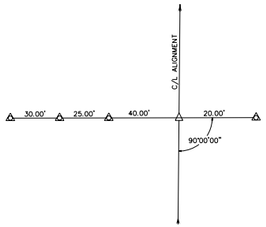
DATE SIGNED: _____

JOHN E. MATTHEWS, PLS
PROFESSIONAL SURVEYOR & MAPPER 4494
STATE OF FLORIDA LB. 7043

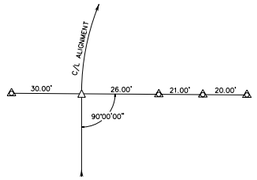
C/L REFERENCE POINTS



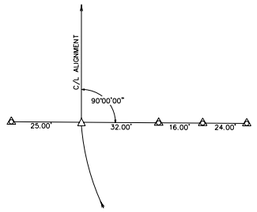
B.O.S. STA 10+00



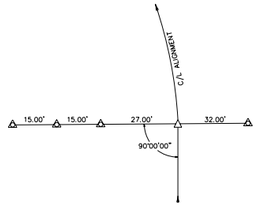
P.O.T. STA 19+00



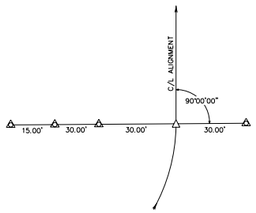
P.C. STA 28+88.57



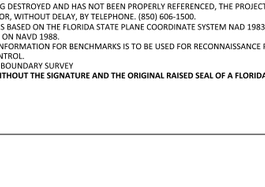
P.T. STA 31+17.84



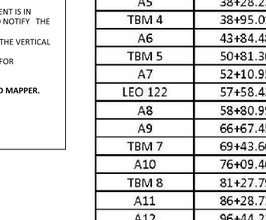
P.C. STA 32+08.59



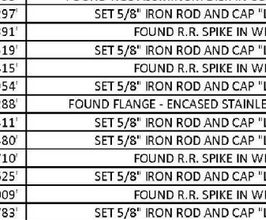
P.T. STA 35+07.19



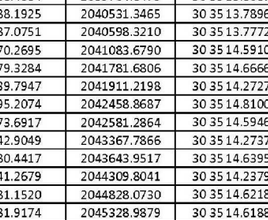
P.C. STA 43+69.12



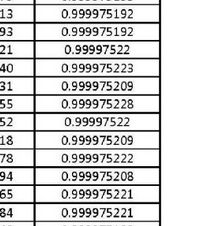
P.T. STA 48+08.83



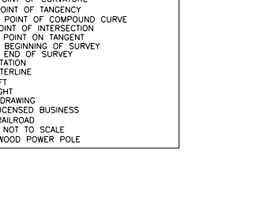
P.I. STA 58+21.33



P.I. STA 76+04.24



P.C. STA 88+98.06



P.C.C. STA 94+30.91

P.T. STA 99+63.74

P.C. STA 100+03.40

P.T. STA 103+52.67

P.I. STA 107+31.66

C/L ALIGNMENT

C/L STATION	NORTHING (Y)	EASTING (X)	SCALE FACTOR
10+00 B.O.S.	577331.5515	2037705.5940	0.999975209
19+00 P.O.T.	577337.1764	2038605.5765	0.999975210
28+88.57 P.C.	577343.3548	2039594.1247	0.999975212
31+17.84 P.T.	577324.8203	2039822.3527	0.999975205
32+08.59 P.C.	577309.6920	2039911.8594	0.999975200
35+07.19 P.T.	577293.8002	2040209.3683	0.999975194
43+69.12 P.C.	577346.2471	2041069.7048	0.999975212
48+08.83 P.T.	577358.9719	2041509.1479	0.999975216
58+21.33 P.I.	577355.9289	2042521.6501	0.999975214
76+04.24 P.I.	577358.1750	2044304.5548	0.999975214
88+98.06 P.C.	577360.1458	2045598.3759	0.999975213
94+30.91 P.C.C.	577311.1715	2046128.2091	0.999975196
99+63.74 P.T.	577163.3487	2046639.2595	0.999975144
100+03.40 P.C.	577148.7365	2046676.1329	0.999975139
103+52.67 P.T.	576996.2907	2046990.0173	0.999975085
107+31.66 P.I.	576805.5898	2047317.5186	0.999975018

HORIZONTAL & VERTICAL CONTROL

DESIGNATION	C/L STATION	OFFSET	ELEV.	DESCRIPTION	NORTHING (Y)	EASTING (X)	LATITUDE	LONGITUDE	SCALE FACTOR
A1	9+75.96	10.11' LT	166.443'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577341.5092	2037681.4937	30 35 14.37291	84 16 48.51706	0.999975213
LEO 125	10+59.52	41.95' RT	162.342'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	577289.9729	2037765.3750	30 35 13.86121	84 16 47.55854	0.999975194
A2	18+25.28	14.28' RT	199.580'	SET5/8" IRON ROD AND CAP "LB. 7043"	577322.4305	2038530.9425	30 35 14.16776	84 16 38.79925	0.999975205
TBM 2	20+63.08	30.90' LT	209.766'	FOUND R.R. SPIKE IN 24" PECAN TREE	577369.0960	2038768.4627	30 35 14.62506	84 16 36.08082	0.999975222
A3	24+54.58	20.49' LT	219.275'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577361.1360	2039160.0155	30 35 14.53866	84 16 31.60138	0.999975218
A4	29+99.78	21.39' RT	249.145'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577317.9955	2039703.5558	30 35 14.10102	84 16 25.38390	0.999975203
LEO 124	30+03.75	50.72' RT	247.953'	FOUND NGS ALUMINUM DISK IN CONCRETE MASS	577288.4684	2039704.8479	30 35 13.80874	84 16 25.36979	0.999975193
A5	38+28.23	25.19' RT	258.297'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577288.1925	2040531.3465	30 35 13.78968	84 16 15.91413	0.999975192
TBM 4	38+95.01	30.38' RT	260.391'	FOUND R.R. SPIKE IN WPP	577287.0751	2040598.3210	30 35 13.77728	84 16 15.14793	0.999975192
A6	43+84.48	23.15' LT	231.519'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577370.2695	2041083.6790	30 35 14.59105	84 16 09.59321	0.99997522
TBM 5	50+81.30	21.18' LT	192.415'	FOUND R.R. SPIKE IN WPP	577379.3284	2041781.6806	30 35 14.66667	84 16 01.60740	0.999975223
A7	52+10.95	17.97' RT	192.954'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577339.7947	2041911.2198	30 35 14.27275	84 16 00.12631	0.999975209
LEO 122	57+58.43	39.09' LT	187.288'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	577395.2074	2042458.8687	30 35 14.81008	84 15 53.85955	0.999975228
A8	58+80.99	17.69' LT	187.411'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577373.6917	2042581.2864	30 35 14.59462	84 15 52.45952	0.99997522
A9	66+67.45	14.09' RT	162.480'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577342.9049	2043367.7866	30 35 14.27374	84 15 43.46218	0.999975209
TBM 7	69+43.66	23.10' LT	163.710'	FOUND R.R. SPIKE IN WPP	577380.4417	2043643.9517	30 35 14.63956	84 15 40.30178	0.999975222
A10	76+09.46	16.92' RT	164.625'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577341.2679	2044309.8041	30 35 14.23796	84 15 32.68494	0.999975208
TBM 8	81+27.79	22.18' LT	168.009'	FOUND R.R. SPIKE IN WPP	577381.1520	2044828.0730	30 35 14.62185	84 15 26.75465	0.999975221
A11	86+28.71	22.18' LT	166.783'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577381.9174	2045328.9879	30 35 14.61884	84 15 21.02384	0.999975221
A12	96+44.23	29.08' LT	210.599'	SET 5/8" IRON ROD AND CAP "LB. 7043"	577291.8513	2046343.6677	30 35 13.70573	84 15 09.41748	0.999975189
LEO 121	97+17.73	38.74' RT	216.156'	FOUND FLANGE - ENCASED STAINLESS STEEL ROD	577206.6261	2046395.8127	30 35 12.86105	84 15 08.82302	0.999975159
A13	104+99.29	21.80' LT	245.747'	SET 5/8" IRON ROD AND CAP "LB. 7043"	576991.6730	2047041.2671	30 35 10.71954	84 15 01.44403	0.999975083

SURVEYOR'S NOTES:
1. ANY PROJECT CONTROL MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ADMINISTRATOR SHOULD NOTIFY THE COUNTY SURVEYOR, WITHOUT DELAY, BY TELEPHONE. (850) 606-1500.
2. THIS PROJECT IS BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM NAD 1983/07 HORIZONTAL DATUM. THE VERTICAL DATUM IS BASED ON NAVD 1988.
3. HORIZONTAL INFORMATION FOR BENCHMARKS IS TO BE USED FOR RECONNAISSANCE PURPOSES ONLY AND NOT FOR HORIZONTAL CONTROL.
4. THIS IS NOT A BOUNDARY SURVEY
5. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

LEGEND:
△ = SET PK NAIL & DISK "LB#7043"
▲ = SET 5/8" IRON ROD AND CAP "LB#7043"
■ = FOUND 4x4 CONCRETE MONUMENT "#1254"
P.C. = POINT OF CURVATURE
P.T. = POINT OF TANGENCY
P.C.C. = POINT OF COMPOUND CURVE
P.I. = POINT OF INTERSECTION
P.O.T. = POINT ON TANGENT
B.O.S. = BEGINNING OF SURVEY
E.O.S. = END OF SURVEY
STA = STATION
C/L CENTERLINE
LT = LEFT
RT = RIGHT
DWG. = DRAWING
L.B. = LICENSED BUSINESS
R.R. = RAILROAD
N.T.S. = NOT TO SCALE
WPP = WOOD POWER POLE

SURVEYOR'S CERTIFICATE:
I HEREBY CERTIFY, THAT AS OF THE DATE SHOWN BELOW, THIS BASELINE CONTROL SURVEY IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY RESPONSIBLE CHARGE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF MEETS THE MINIMUM TECHNICAL STANDARDS AS SET FORTH IN FLORIDA ADMINISTRATIVE CODE 5j-17.

PROJECT NAME:
BANNERMAN ROAD
(BASELINE CONTROL SURVEY)
LEON COUNTY, FLORIDA

JOB NUMBER: 16714	F.B.: 10-104 PG.: 38-53	REVISION	DATE
DWG. NAME: CONTROL MAP	FIELD DATE: 8/02/10 TO 8/12/10		
PARTY CHIEF: JM & SK	DRAWN BY: J. PULICE		
SCALE: N.T.S.	CHECKED BY: J.MATTHEWS		

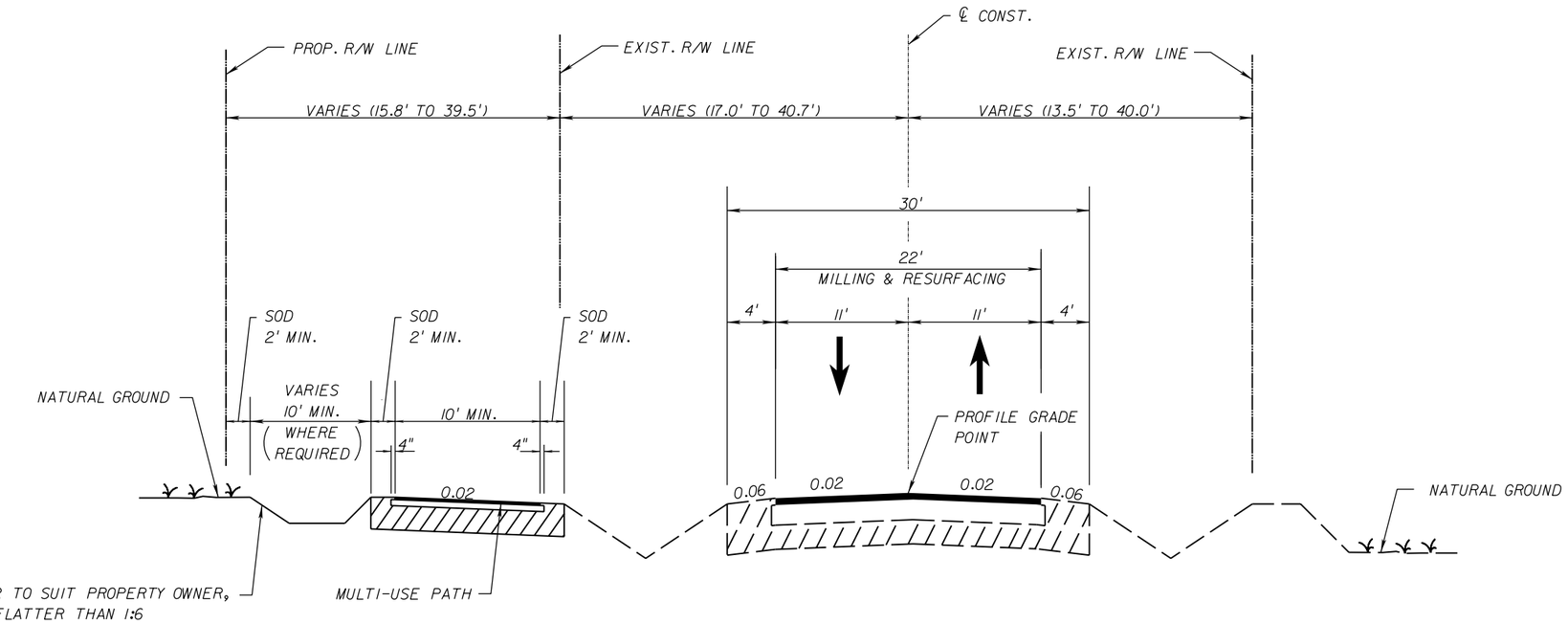
HSA CONSULTING GROUP INC.
Experience • Technology • Innovation

1648 METROPOLITAN CIRCLE
TALLAHASSEE, FLORIDA 32308
P: (850) 309-7510
F: (850) 309-0246

DATE SIGNED: _____

JOHN E. MATTHEWS, PLS, PSM
PROFESSIONAL SURVEYOR & MAPPER 4494
STATE OF FLORIDA LB. 7043

SEGMENT 1
ALTERNATIVE A



2 - LANE RURAL UNDIVIDED
WITH 11' LANES AND MULTI-USE PATH
STA. 10+20.00 TO STA. 97+40.00
DESIGN SPEED = 45 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1701 Hermitage Boulevard, Suite 101
Tallahassee, Florida 32308
850-558-2800
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

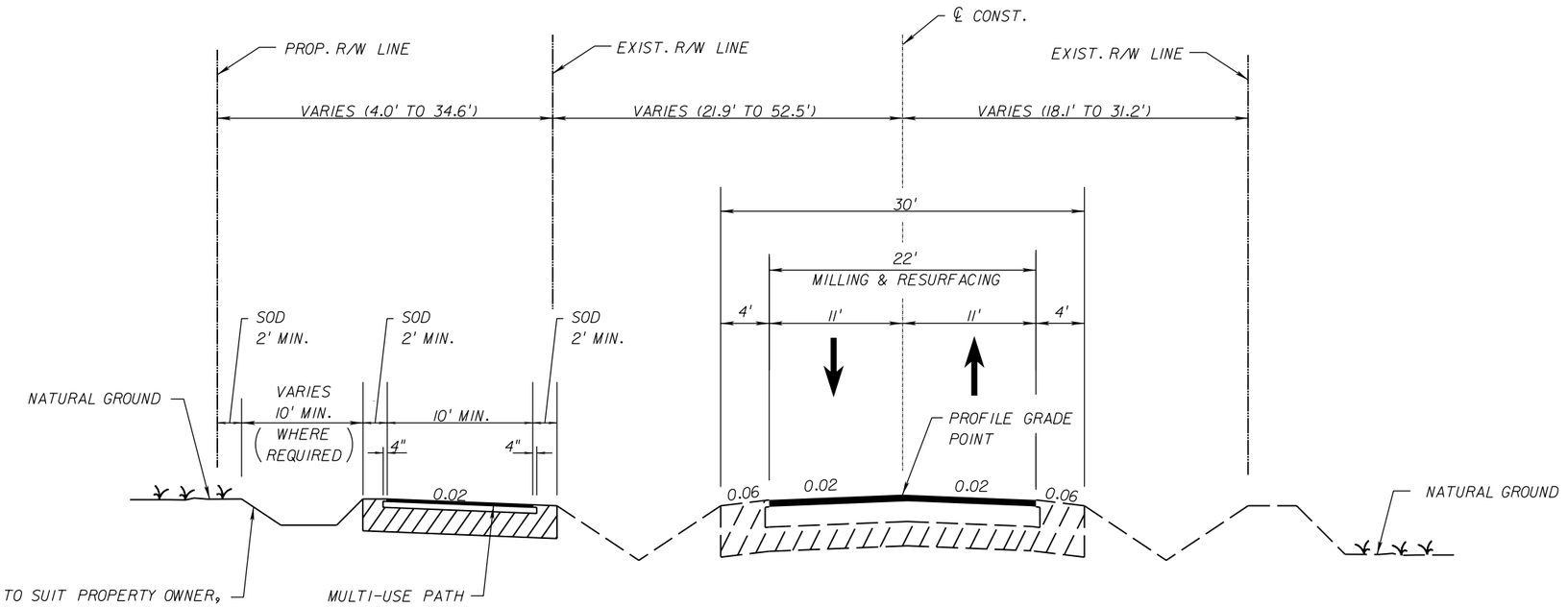
LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

TYPICAL SECTIONS

SHEET NO. 4

morser 11/6/2012 1:35:46 PM X:\08-1994-000_Bannerman_Corridor_Study\Plan Set\TYPSRD01.dgn

SEGMENT 2
ALTERNATIVE A



2 - LANE RURAL UNDIVIDED
WITH 11' LANES AND MULTI-USE PATH
STA. 97+40.00 TO STA. 154+40.00
DESIGN SPEED = 45 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1701 Hermitage Boulevard, Suite 101
Tallahassee, Florida 32308
850-558-2800
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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TYPICAL SECTIONS

SHEET NO. 5

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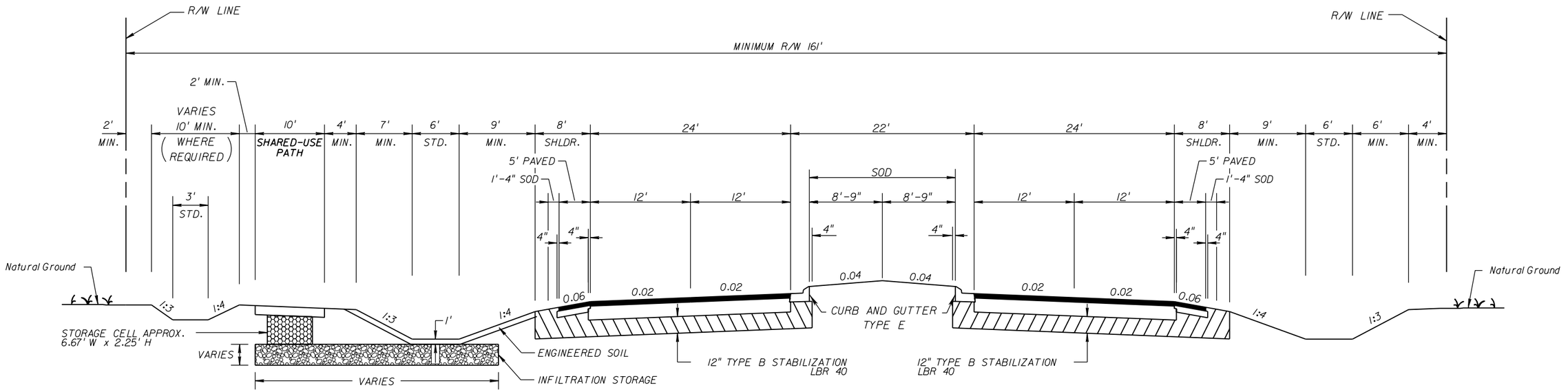
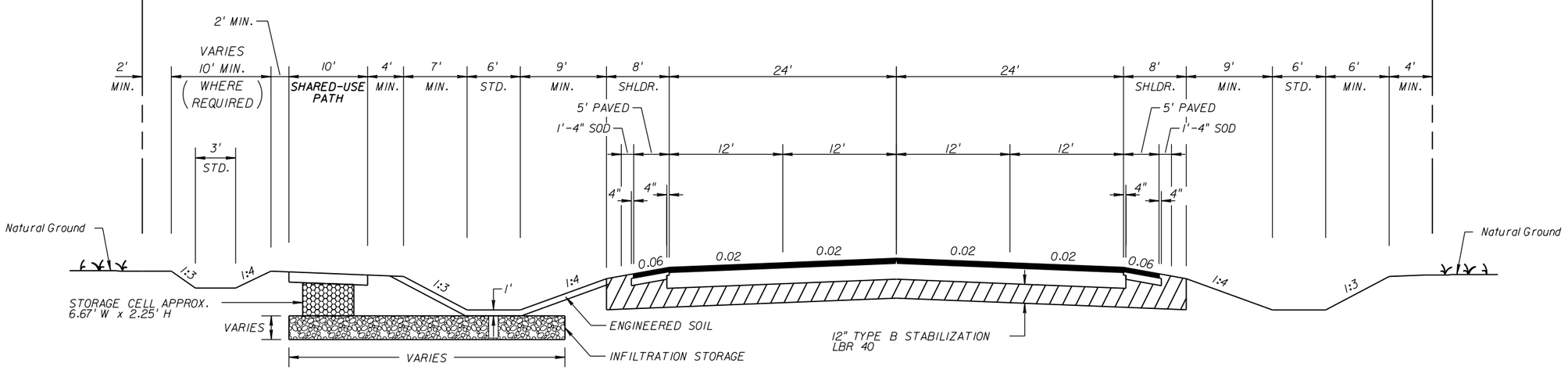


TYPICAL SECTION
BANNERMAN ROAD - SEGMENT 3
STA. 157+40.32 TO STA. 232+31.00
DESIGN SPEED = 45 MPH



TYPICAL SECTION
BANNERMAN ROAD - SEGMENT 3
STA. 154+40.00 TO STA. 157+40.32
DESIGN SPEED = 45 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
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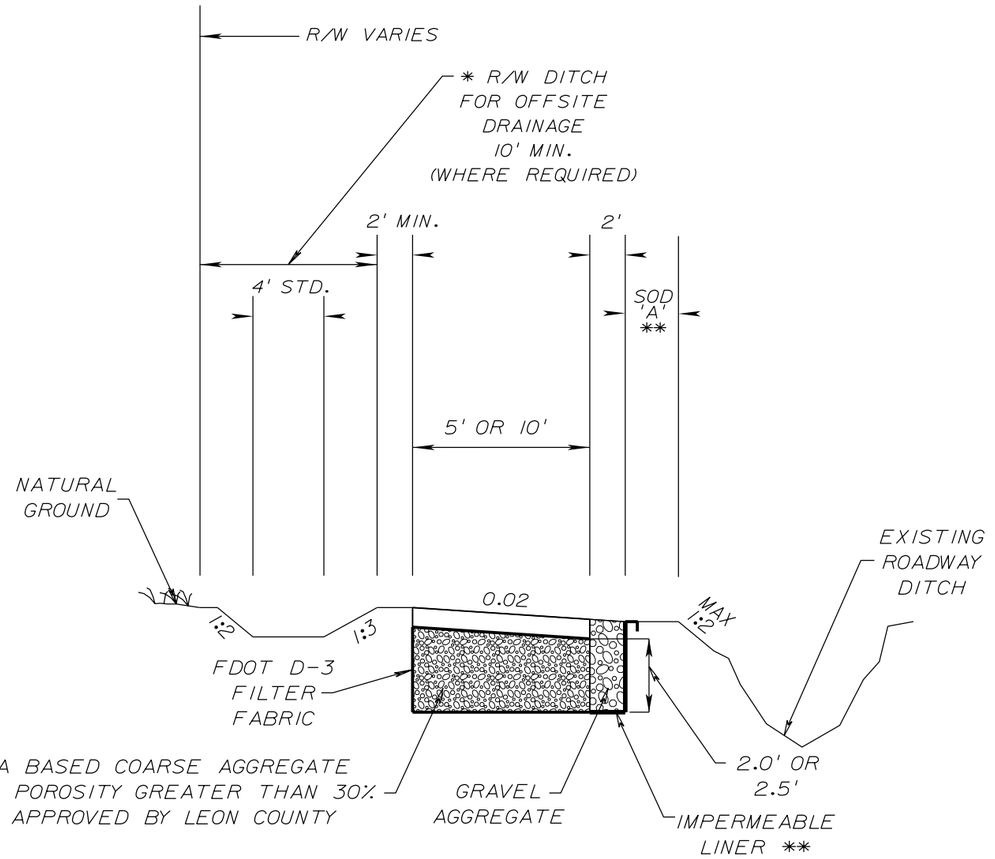
TYPICAL SECTIONS

SHEET NO. 6



* NOTE: R/W DITCH TO BE PROVIDED ONLY WHEN SHOWN IN THE CONSTRUCTION PLANS.

** NOTE: IMPERMEABLE LINER IS REQUIRED WHEN 'A' IS LESS THAN 5' AND THE TRENCH BOTTOM IS MORE THAN 5' ABOVE THE ROADWAY DITCH.

TYPICAL CROSS SECTION VIEW
PEDESTRIAN FACILITY SUB-BASE
(R/W DITCH SHOWN)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
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1701 Hermitage Boulevard, Suite 101
Tallahassee, Florida 32308
850-558-2800
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LEON COUNTY DEPARTMENT OF PUBLIC WORKS
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PHONE (850) 606-1500 * FAX (850) 606-1501

TYPICAL SECTIONS

SHEET NO. 7

Proposed R/W
Existing R/W
Edge of Path
ASPHALT PARKING
BRICK WALL
ASPHALT CURB
CONCRETE DRIVEWAY
ASPHALT DRIVEWAY
BLOCK WALL
MERIDIAN/ BANNERMAN
NO TURN ON RED
EDGE OF PAVEMENT
C/L PAVEMENT
CURB AND GUTTER
LEON 155 COUNTY
ADOPT A ROAD
45MPH
BANNERMAN ROAD
MERIDIAN ROAD
N 89° 38' 31" E
1,888.09
Limits of Milling and Resurfacing
Existing R/W
BEGIN CONSTRUCTION
BEGIN MULTI-USE PATH
STA. 10+01.77 (38.00' LT)
BEGIN PROJECT
BEGIN SEGMENT 1
MATCH EXISTING PAVEMENT
STA. 10+20.00
POT STA. 10+00.00
10
11
12
13
14
I-65
I-70
I-75
I-80
0 10 40
Feet
N
Match Line 14+80.00

190
180
170
160
10+00
11+00
12+00
13+00
14+00
BEGIN CONSTRUCTION
BEGIN MULTI-USE PATH
STA. 10+01.77 (38.00' LT)
BEGIN PROJECT
BEGIN SEGMENT 1
MATCH EXISTING PAVEMENT
STA. 10+20.00
Existing ground ℄ of Multi-use Path
Existing Ground ℄ of Construction
187.25
182.14
Scale
Horizontal: 1"=40'
Vertical: 1"=10

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15 23.003, F.A.C.

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

PLAN AND PROFILE

SHEET NO. 8

morser 11/6/2012 11:01:55 AM X:\08-1994-000_Bannerman_Corridor_Study\Plan Set\Segment 1\PLANR001.DGN

Match Line 14+80.00

Match Line 20+40.00

Proposed R/W

Existing R/W

Limits of Milling and Resurfacing

Existing R/W

N 89° 38' 31" E
1,888.09

BANNERMAN BLUFF

STOP

C/L PAVEMENT

EDGE OF PAVEMENT

ASPHALT DRIVEWAY

CONCRETE DRIVEWAY

CONCRETE / ASPHALT DRIVEWAY

DIRT DRIVEWAY

STEPS

MBX

CRP MW

4'WWF

0 10 40
Feet

N

Existing ground
℄ of Multi-use Path

Existing Ground
℄ of Construction

187.25

182.14

207.34

206.98

Scale
Horizontal: 1"=40'
Vertical: 1"=10

15+00 16+00 17+00 18+00 19+00 20+00

180 190 200 210

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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LEON COUNTY DEPARTMENT OF PUBLIC WORKS
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PLAN AND PROFILE

SHEET NO. 9

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Match Line 20+40.00

Match Line 26+00.00

Proposed R/W

Edge of Path

℄ of Path

Existing R/W

BANNERMAN ROAD

N 89° 38' 31" E
1,888.09

Limits of Milling and Resurfacing

Existing R/W

C/L PAVEMENT

MILLED ASPHALT DRIVEWAY

CONCRETE DRIVEWAY

SIGNAL LIGHT AHEAD

21 22 23 24 25 26

N

0 10 40
Feet

230
220
210
200

207.34

206.98

223.35

223.25

Existing ground
℄ of Multi-use Path

Existing Ground
℄ of Construction

21+00 22+00 23+00 24+00 25+00 26+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15 23.003, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

PLAN AND PROFILE

SHEET NO. 10

morser 11/6/2012 11:02:07 AM X:\08-1994-000_Bannerman_Corridor_Study\Plan Set\Segment 1\PLANRD03.DGN

Match Line 26+00.00

Match Line 31+60.00

Proposed R/W

Existing R/W

N 89° 38' 31" E
1,888.09

S 80° 25' 11" E
92.33

28 Limits of Milling and Resurfacing

PC STA. 28+88.09

PI STA. 30+02.76

PT STA. 31+16.86

60' 88' 28"

EDGE OF PAVEMENT

MILLED ASPHALT DRIVEWAY

ASPHALT DRIVEWAY

SCHOOL BUS STOP AHEAD

UNK CLUSTER

0 10 40
Feet

CURVE DATA BANNERMAN-1
PI STA. = 30+02.76
DELTA = 9° 56' 18" (RT)
D = 4° 20' 39"
T = 114.67
L = 228.77
R = 1,318.87
PC STA. = 28+88.09
PT STA. = 31+16.86

Existing ground
℄ of Multi-use Path

Existing Ground
℄ of Construction

256.88
253.69
223.35
223.25

250
240
230
220

27+00
28+00
29+00
30+00
31+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

PLAN AND PROFILE

SHEET NO. 11

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CURVE DATA BANNERMAN-2
PI STA. = 33+58.88
DELTA = 13° 04' 08" (LT)
D = 4° 23' 03"
T = 149.69
L = 298.09
R = 1,306.87
PC STA. = 32+09.18
PT STA. = 35+07.27

Match Line 31+60.00

Match Line 37+20.00

N

0 10 40
Feet

Proposed R/W

Existing R/W

Limits of Milling and Resurfacing

PC STA. 32+09.18

PT STA. 35+07.27

PI STA. 33+58.88

S 80° 55' 11" E
93.83

N 86° 30' 42" E
336.30

32 33 34 35 36 37

C/L PAVEMENT

EDGE OF PAVEMENT

CONCRETE PAD

DIRT DRIVEWAY

BANNERMAN/ LANE

BANNERMAN/ HARVEST RIDGE(PRIVATE)

GRAVEL DRIVEWAY

CONCRETE DRIVEWAY

ASPHALT DRIVEWAY

BLOCKER CIRCLE

STOP

255

MBX(2)

MBX(3)

MBX(4)

4'CLF

CRP.MYR.

12"L.V.O.

12"V.O.

16"V.O.

18"V.O.

25"V.O.

30"V.O.

18"PE

24"C

Existing ground ℄ of Multi-use Path

Existing Ground ℄ of Construction

256.88

253.69

258.28

258.00

270
260
250
240

32+00 33+00 34+00 35+00 36+00 37+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 12

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Match Line 37+20.00

Match Line 42+80.00

Proposed R/W

Existing R/W

Limits of Milling and Resurfacing

Existing R/W

N

0 10 40

Feet

28"PECAN

RESIDENTIAL HOUSE

RESIDENTIAL HOUSE

HEDGE

HEDGE

CONCRETE ASPHALT DRIVEWAY

STEPS

FENCE

200 LF

GRASS DRIVEWAY

12"W.O.

19"R.O.

14"P

14"LV.O.

18"P

14"T

42"L.O.

12"W.O.

12/12"P

STA. 38+43.57

38

39

40

41

42

BANNERMAN ROAD

N 86° 30' 42" E

336.30

N 86° 30' 44" E

525.49

C/L PAVEMENT

255

250

245

240

MBX(10)

SCHOOL BUS STOP AHEAD

MILLED ASPHALT DRIVEWAY

GRASS DRIVEWAY

ASPHALT DRIVEWAY

MBX MBX MBX

258.28

258.00

255

245

235

225

238.59

235.13

Existing ground ℄ of Multi-use Path

Existing Ground ℄ of Construction

38+00

39+00

40+00

41+00

42+00

Scale

Horizontal: 1"=40'

Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 13

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Match Line 42+80.00

Match Line 48+40.00

Proposed R/W

Existing R/W

Existing R/W

SCOTT TOWER ROAD

SCOOT TOWER/ BANNERMAN STOP

BUNCKER

STOP

EDGE OF PAVEMENT

EDGE OF PAVEMENT

Limits of Milling and Resurfacing

PI STA. 45+89.17

PC STA. 43+69.07

PT STA. 48+09.12

POOL

4'CLF

N

0 10 40

Feet

CURVE DATA BANNERMAN-3
PI STA. = 45+89.17
DELTA = 3° 39' 36" (RT)
D = 0° 49' 54"
T = 220.10
L = 440.05
R = 6,888.81
PC STA. = 43+69.07
PT STA. = 48+09.12

238.59

235.13

206.91

205.70

Existing Ground
℄ of Construction

Existing ground
℄ of Multi-use Path

Scale
Horizontal: 1"=40'
Vertical: 1"=10

230 220 210 200

43+00 44+00 45+00 46+00 47+00 48+00

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PLAN AND PROFILE

SHEET NO. 14

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Match Line 48+40.00

Match Line 54+00.00

Existing R/W

Proposed R/W

Limits of Milling and Resurfacing

Existing R/W

RED EAGLE ROAD

BANNERMAN ROAD

SUDA TERRACE

YELLOW MOON DRIVE

ASPHALT DRIVEWAY

SCHOOL BUS STOP AHEAD

STOP

EDGE OF PAVE

C/L PAVEMENT

S 89° 49' 40" E
1,012.22

0 10 40
Feet

N

49 50 51 52 53 54

205 200 195

206.91

205.70

Existing Ground
℄ of Construction

Existing ground
℄ of Multi-use Path

195.00

192.47

205
195
185
175

49+00 50+00 51+00 52+00 53+00 54+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 15

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Match Line 54+00.00

Match Line 59+60.00

Proposed R/W

Existing R/W

Existing R/W

Limits of Milling and Resurfacing

S 89° 49' 40" E
1,012.22

N 89° 55' 40" E
1,782.91

BANNERMAN ROAD

BLUE SMOKE DRIVE

P.I. STA. 58+21.33

STOP

EDGE OF PAVEMENT

GRASS DRIVEWAY

ASPHALT DRIVEWAY

4'HWF

5'WWF

N

0 10 40

Feet

Existing Ground ℄ of Construction

Existing ground ℄ of Multi-use Path

195.00

192.47

186.52

186.81

Scale
Horizontal: 1"=40'
Vertical: 1"=10

55+00 56+00 57+00 58+00 59+00

200 190 180 170

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PLAN AND PROFILE

SHEET NO. 16

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Match Line 59+60.00

Match Line 65+20.00

Proposed R/W

Existing R/W

R/W

N

0 10 40

Feet

60 61 62 63 64 65

C/L PAVEMENT

EDGE OF PAVEMENT

N 89° 55' 40" E
1,782.91

Limits of Milling and Resurfacing

GRASS DRIVEWAY

ASPHALT DRIVEWAY

CONCRETE DRIVEWAY

CONCRETE DRIVEWAY

MBX

4"HWF

13"HW

15"CW

12"HC

13"P 34"P 16"P 31"P 38"P 18"P 25"P

13"V.O. 14"P 17"LR.O. 14"W.O. 13"P 13"V.O. 17/18"V.O. 15"P 15"P 16"P

EDGE OF PAVEMENT

STOP

ROCK AND CONCRETE STRUCTURE

ASPHALT DRIVEWAY TO CANOPY ROAD BAPTIST CHURCH

Existing R/W

Existing Ground
℄ of Construction

Existing ground
℄ of Multi-use Path

186.81

186.52

165.76

161.41

185

175

165

155

60+00 61+00 62+00 63+00 64+00 65+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 17

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Match Line 65+20.00

Match Line 70+80.00

Existing R/W
Proposed R/W

N
0 10 40
Feet

BANNERMAN ROAD

66 67 68 69 70

N 89° 55' 40" E
1,782.91

C/L PAVEMENT

Limits of Milling and Resurfacing

Existing R/W

ANTERN LIGHT ROAD

Existing ground
℄ of Multi-use Path

Existing Ground
℄ of Construction

165.76

161.41

165.21

163.00

175
165
155
145

66+00 67+00 68+00 69+00 70+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 18

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Match Line 70+80.00

Match Line 76+40.00

Proposed R/W

Existing R/W

N

0 10 40

Feet

34"L.V.O.

24"R.O.

16"R.O.

30"L.V.O.

4"CLF

24"C

24"V.O.

24"L.V.O.

27"L.O.

4"WBF

CONCRETE DRIVEWAY

ASPHALT DRIVEWAY

MBX(2)

MBX PLANTER

EDGE OF PAVEMENT

71 72 73 74 75 76

STA. 76+04.24

BANNERMAN ROAD

465

N 89° 55' 40" E

1,782.91

Limits of Milling and Resurfacing

MBX

Existing R/W

Begin Drainage Swale Sta. 76+10.57

175

165

155

145

165.21

163.00

168.42

166.00

Existing ground ℄ of Multi-use Path

Existing Ground ℄ of Construction

71+00 72+00 73+00 74+00 75+00 76+00

Scale

Horizontal: 1"=40'

Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 19

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Match Line 76+60.00

Match Line 82+00.00

Proposed R/W

Existing R/W

Begin Drainage Swale
Sta. 80+91.03

Top of Drainage Swale

N
0 10 40
Feet

EDGE OF PAVEMENT

C/L PAVEMENT

N 89° 54' 46" E
1,293.29

Limits of Milling
and Resurfacing

165

EDGE OF PAVEMENT

EDGE OF PAVEMENT

DRIVEWAY

DRIVEWAY

GATE

4'HWF

RCP

HBX

77 78 79 80 81 82

180 170 160 150

168.42

166.00

165.00

164.51

Existing ground
℄ of Multi-use Path

Existing Ground
℄ of Construction

77+00 78+00 79+00 80+00 81+00 82+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 20

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Match Line 82+00.00

Match Line 87+60.00

APPROXIMATE LOCATION OF FLOOD ZONE

Begin Boardwalk Sta. 84+07.25

End Boardwalk Sta. 84+50.00

Proposed R/W

Existing R/W

N

0 10 40

Feet

Final Design Will Evaluate Flooding Issues at This Location

Limits of Milling and Resurfacing

BANNERMAN ROAD

N 89° 54' 46" E
1,293.23

Existing R/W

GUARDRAIL

DIRT DRIVEWAY

CONCRETE DRIVEWAY

PRESERVATION ROAD

GOLF CLUB AT SUMMERBROOK

STOP

MBX

Begin Boardwalk Sta 84+07.25 Match Existing Eelevation.

Begin Boardwalk Sta 84+50.00 Match Existing Eelevation.

Existing Ground ℄ of Construction

Existing ground ℄ of Multi-use Path

165.00

164.51

172.43

170.55

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 21

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CURVE DATA BANNERMAN-4
PI STA. = 91+65.05
DELTA = 10° 43' 49" (RT)
D = 2° 00' 41"
T = 267.52
L = 533.47
R = 2,848.53
PC STA. = 88+97.53
PT STA. = 94+31.00

Match Line 87+60.00

Match Line 93+20.00

Proposed R/W

Existing R/W

Existing R/W

PI STA. 91+65.05

PC STA. 88+97.53

Limits of Milling and Resurfacing

N 89° 54' 46" E
1,293.29' ℄ PAVEMENT

EDGE OF PAVEMENT

EDGE OF PAVEMENT

GRAVEL DRIVEWAY

GRASS DRIVEWAY

GRASS DRIVEWAY

ASPHALT DRIVEWAY

5' SIDEWALK

STOP

45MPH

6'WBF

6'DW

38'LVD

24'LD

18'WD

17'LRD

12'LRD

15'P

17'CH

MBX

25'P

20'P

14'P

19'P

16'P

13'P

88 89 90 91 92 93

175 180 185 190

Existing Ground
℄ of Construction

Existing Ground
℄ of Construction

172.43

170.55

197.30

195.31

195 185 175 165

88+00 89+00 90+00 91+00 92+00 93+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 22

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Match Line 93+20.00

Match Line 98+80.00

Proposed R/W

Existing R/W

BANNERMAN ROAD

94 95 96 97 98

BULL HEADLY ROAD

BLOCK BUILDING

0 10 40

Feet

PI STA. 96+97.96

PC STA. 94+31.00

Limits of Milling and Resurfacing

C/L PAVEMENT

EDGE OF PAVEMENT

SIDE WALK

ASPHALT DRIVEWAY

GRASS DRIVEWAY

GRAVEL DRIVEWAY

DW CLUSTER

STOP LIGHT AHEAD

DO NOT ENTER

STOP

MBX

4'BWF

4'HBF

END SEGMENT 1
BEGIN SEGMENT 2
STA. 97+40.00

END MULTI-USE PATH
STA. 97+19.80 (38.00' LT)

CURVE DATA BANNERMAN-5
PI STA. = 96+97.96
DELTA = 10° 58' 07" (RT)
D = 2° 03' 38"
T = 266.97
L = 532.30
R = 2,780.53
PC STA. = 94+31.00
PT STA. = 99+63.30

Existing Ground
℄ of Construction

Existing ground
℄ of Multi-use Path

221.04

217.71

197.30

195.31

215 205 195 185

94+00 95+00 96+00 97+00 98+00

Scale
Horizontal: 1"=40'
Vertical: 1"=10

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PLAN AND PROFILE

SHEET NO. 23

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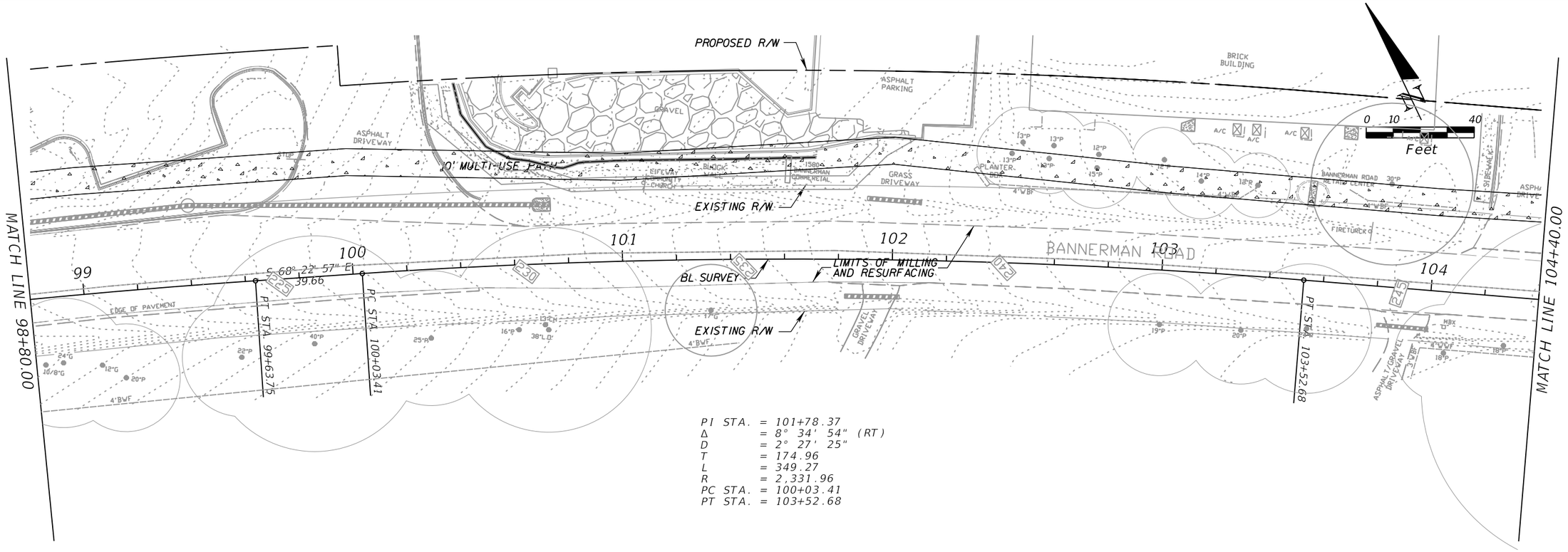

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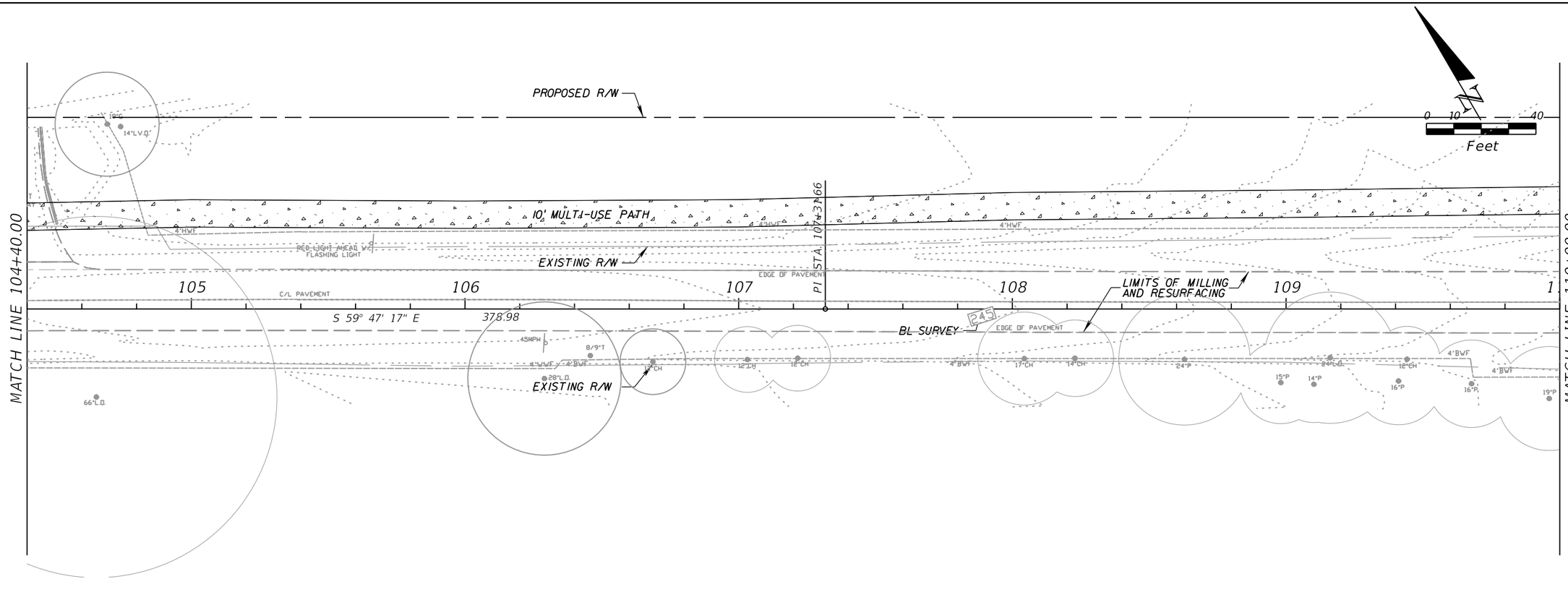

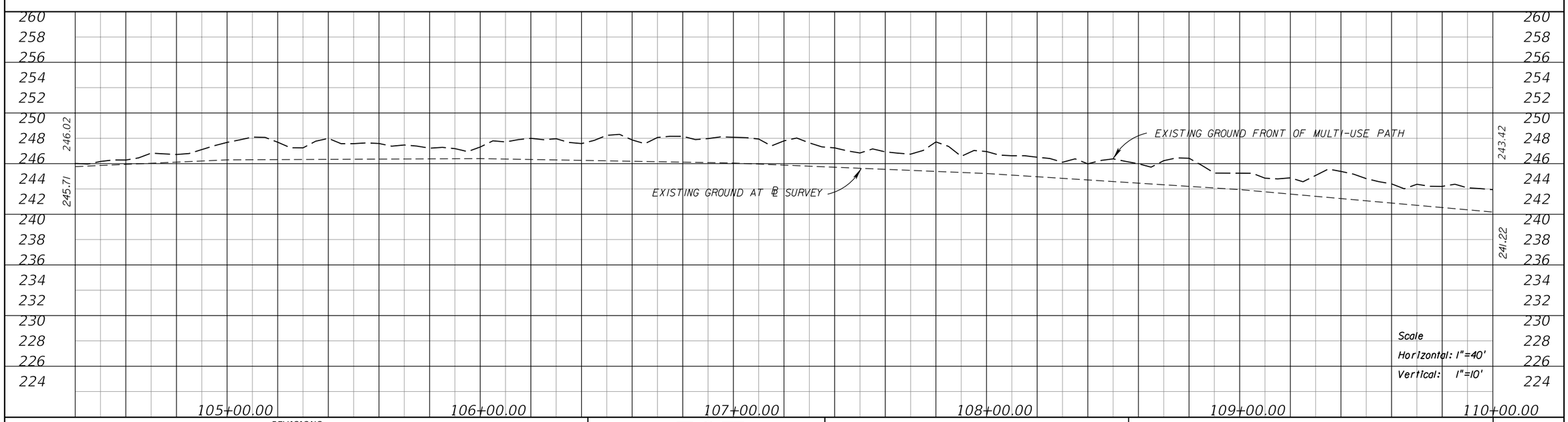

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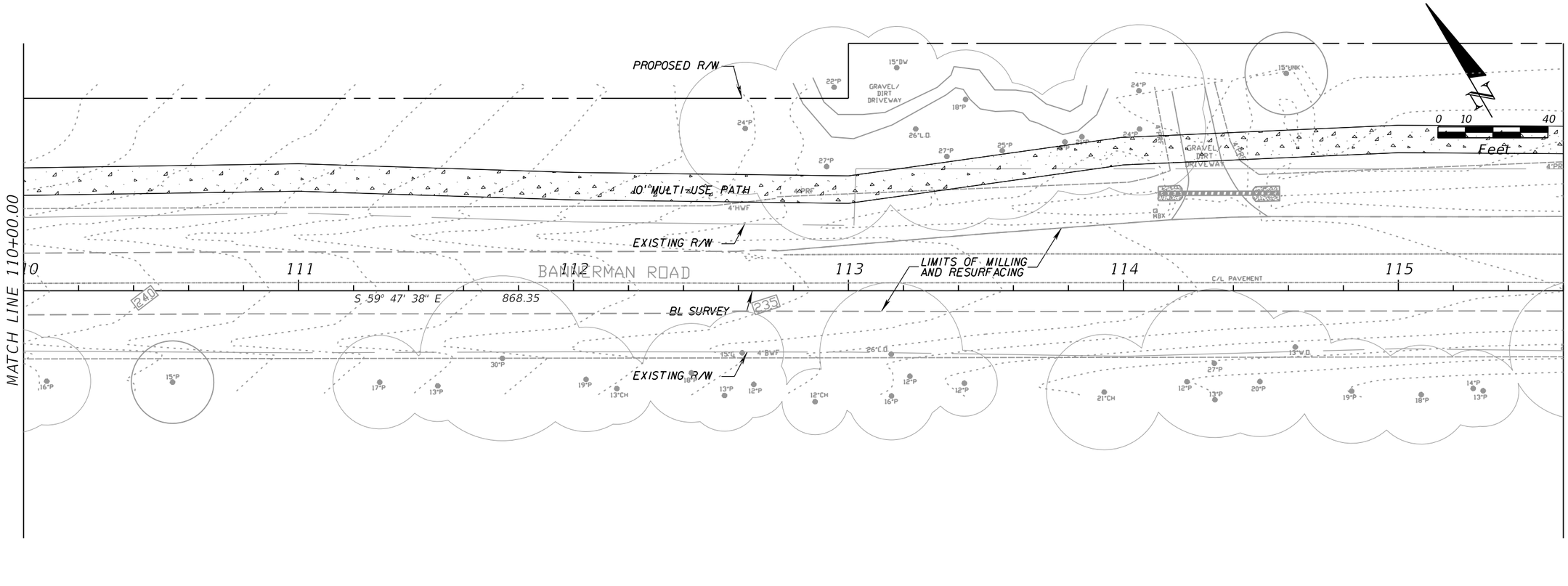

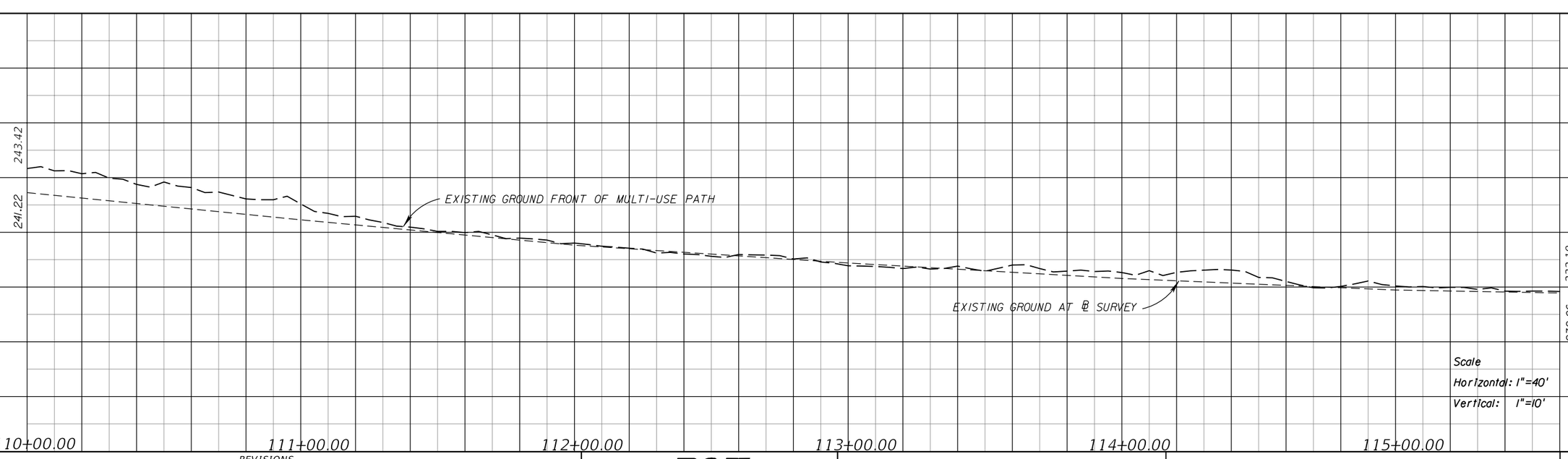

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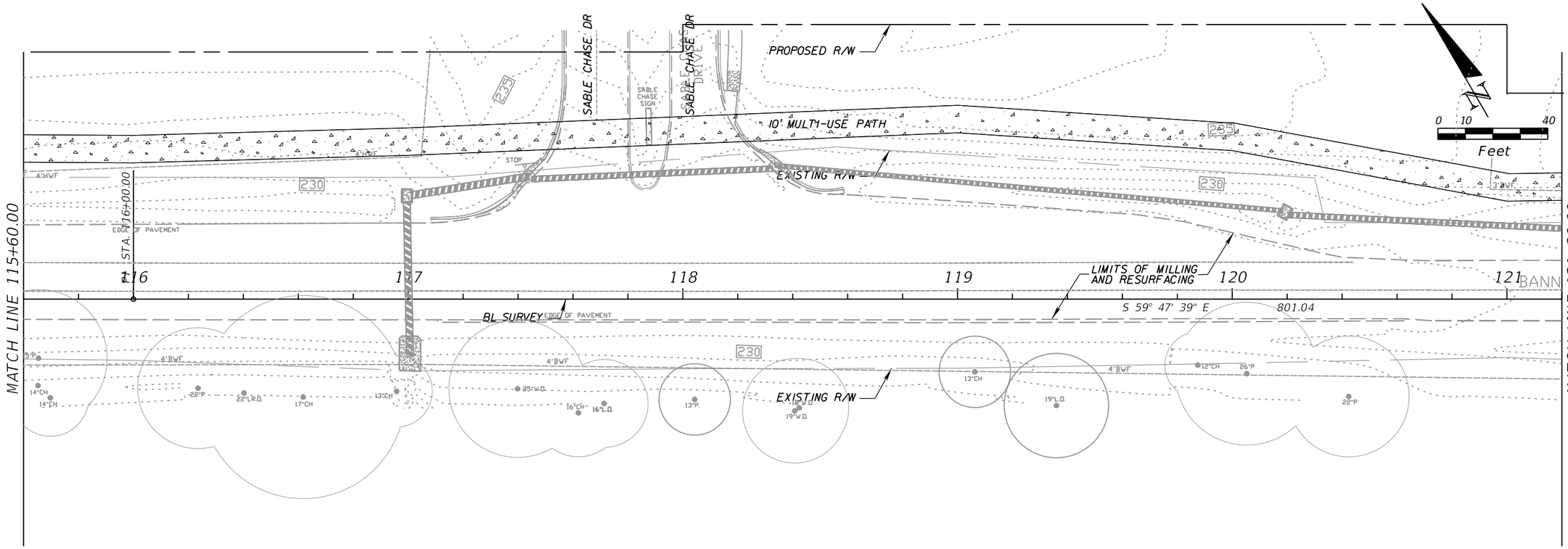

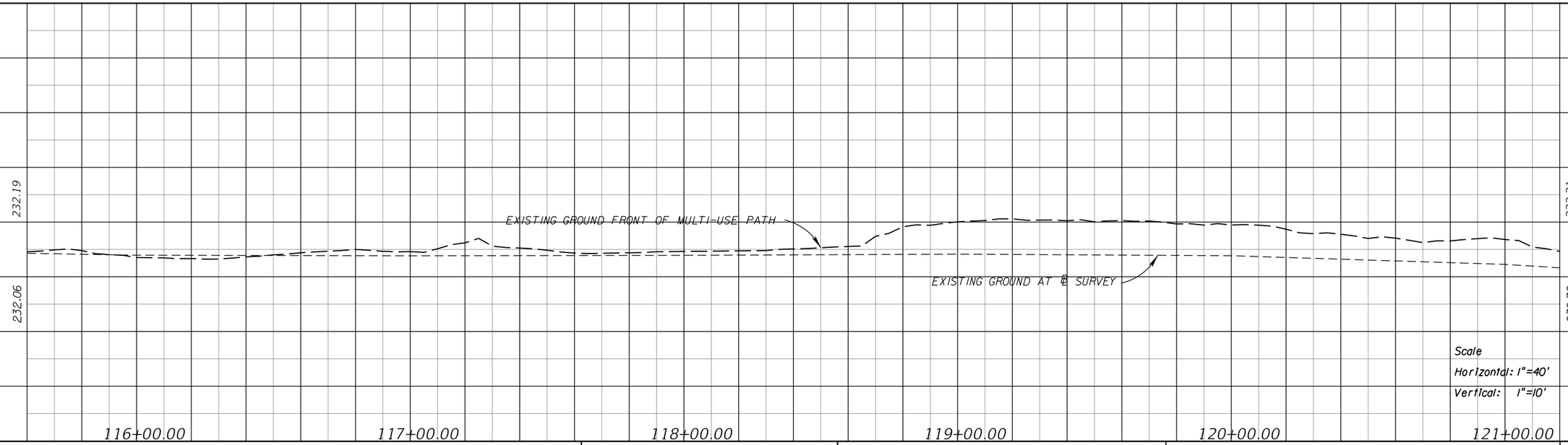

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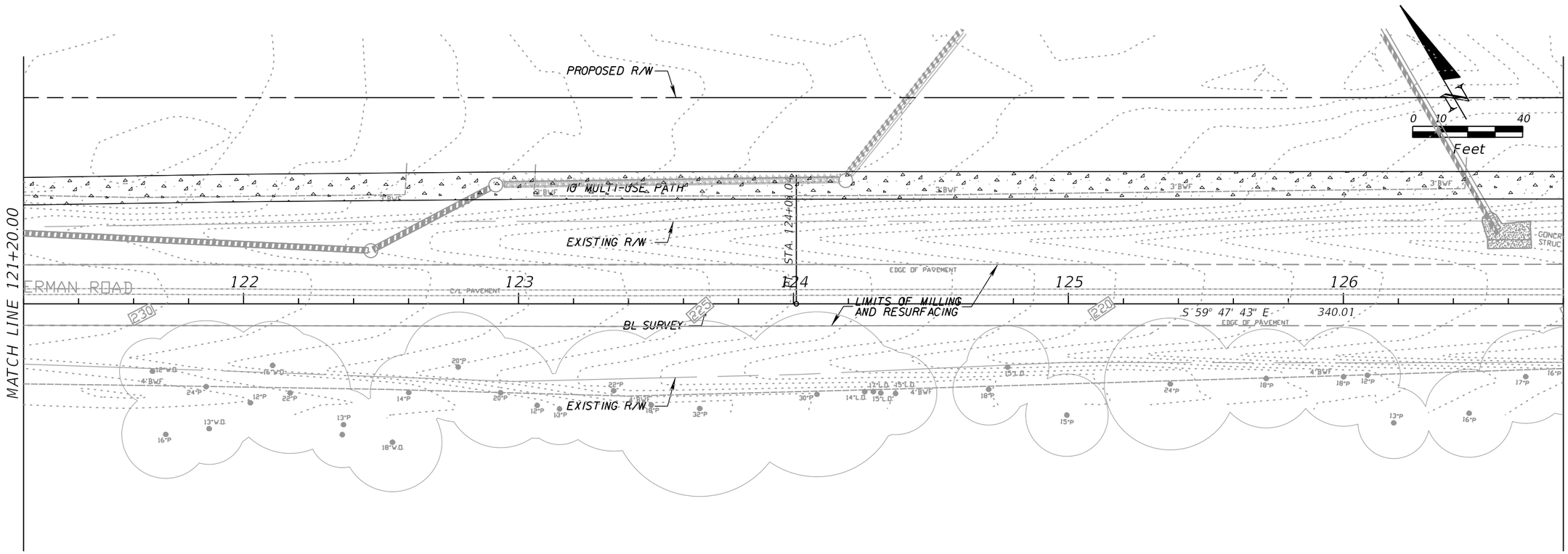

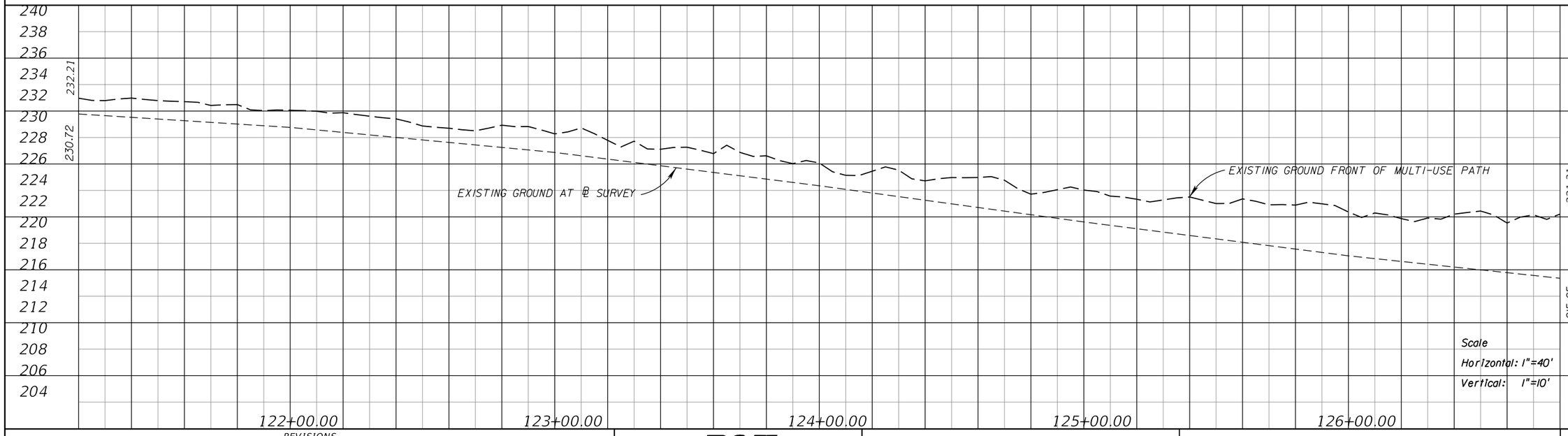

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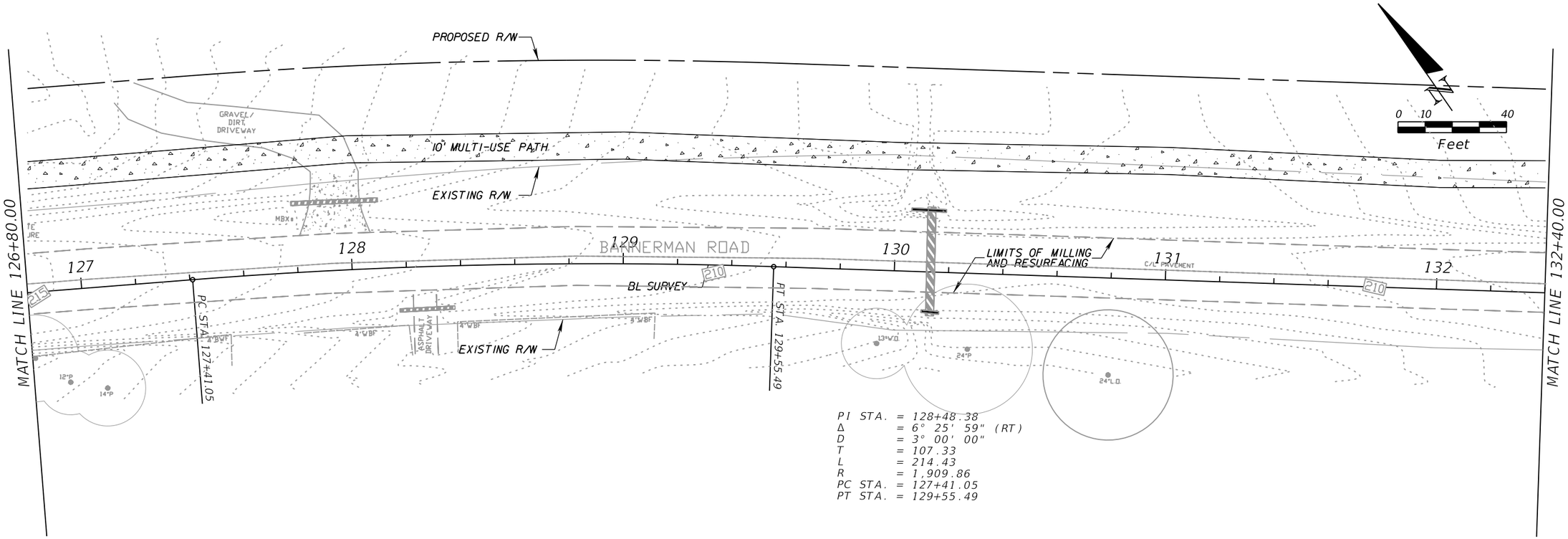

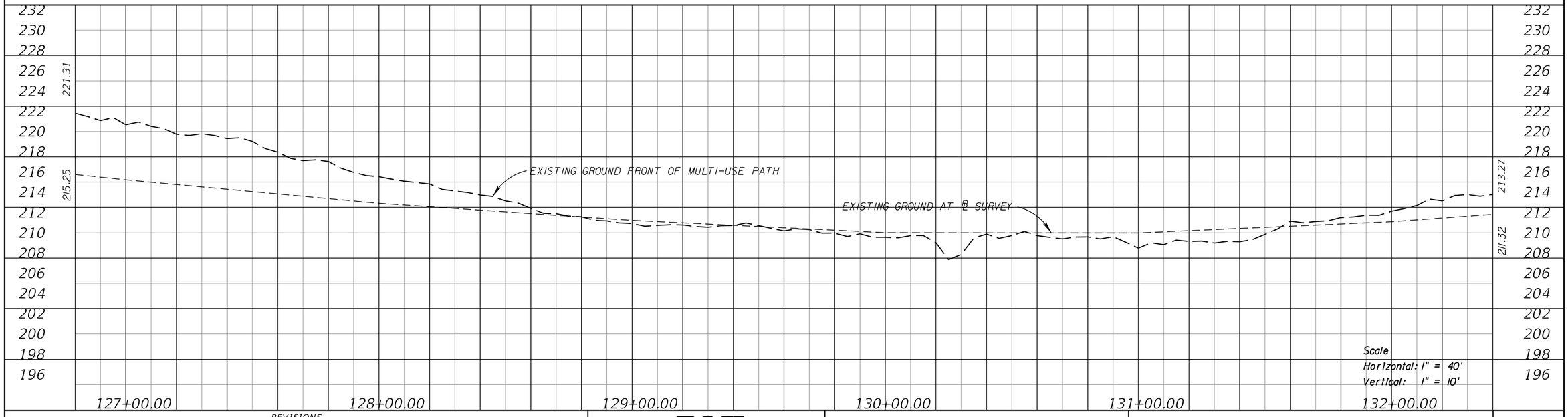

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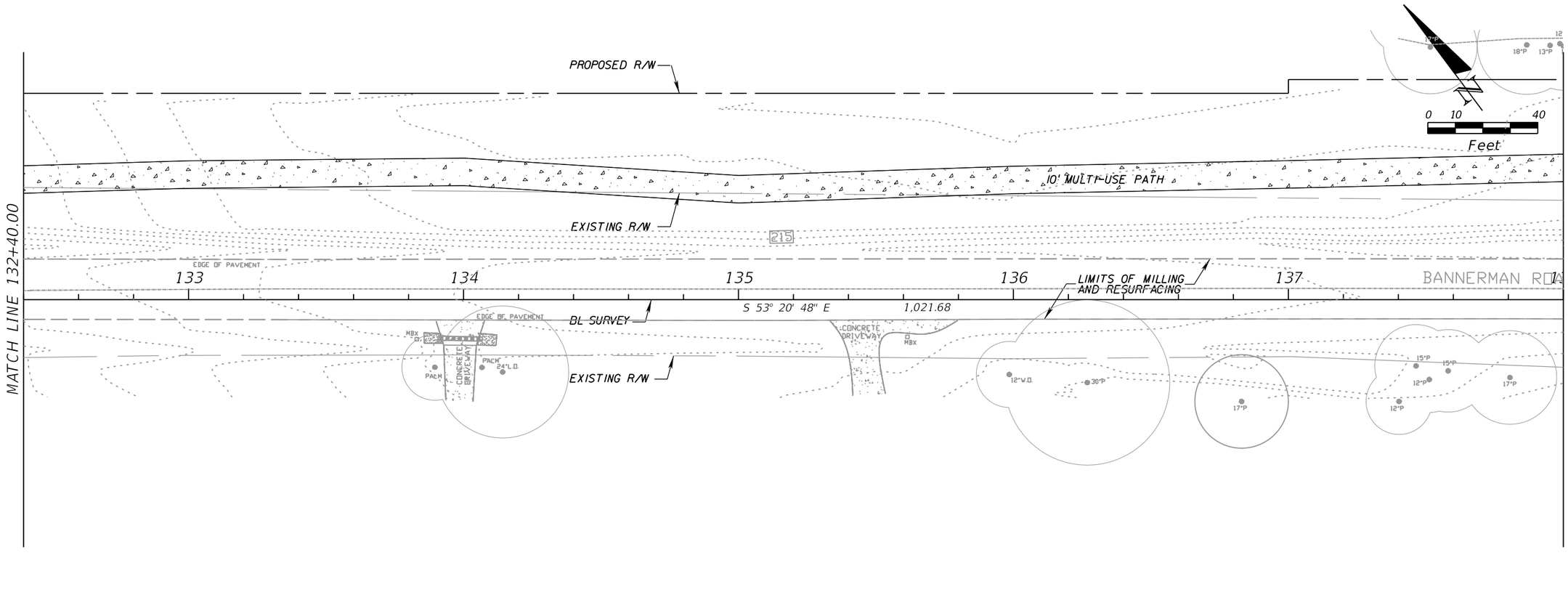

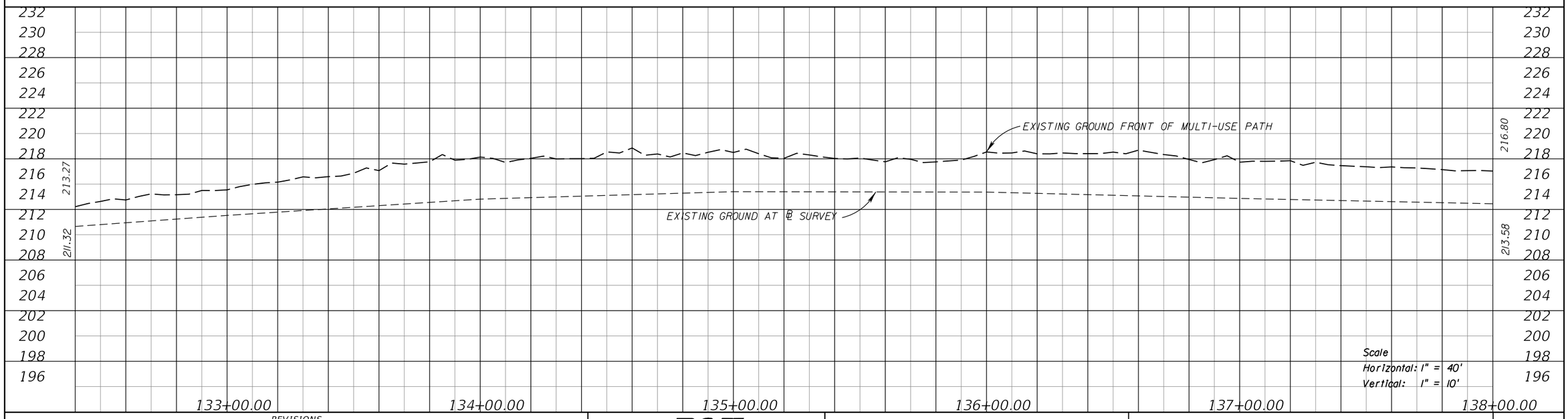

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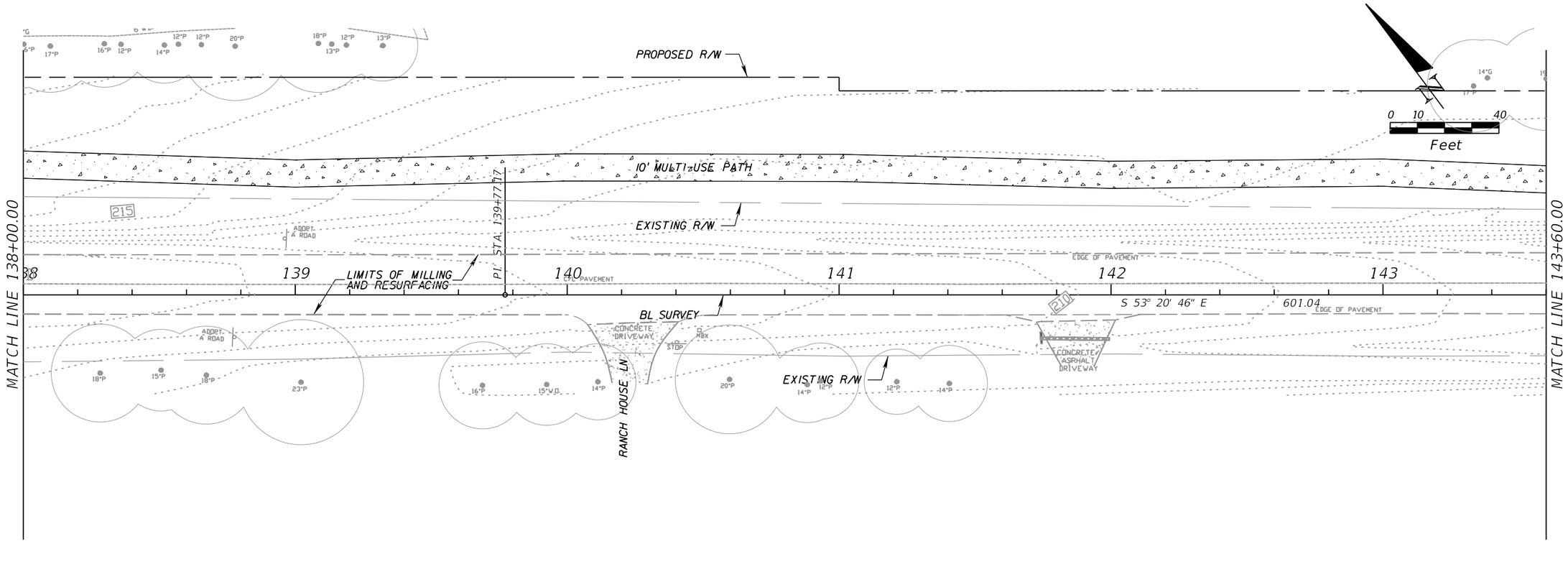

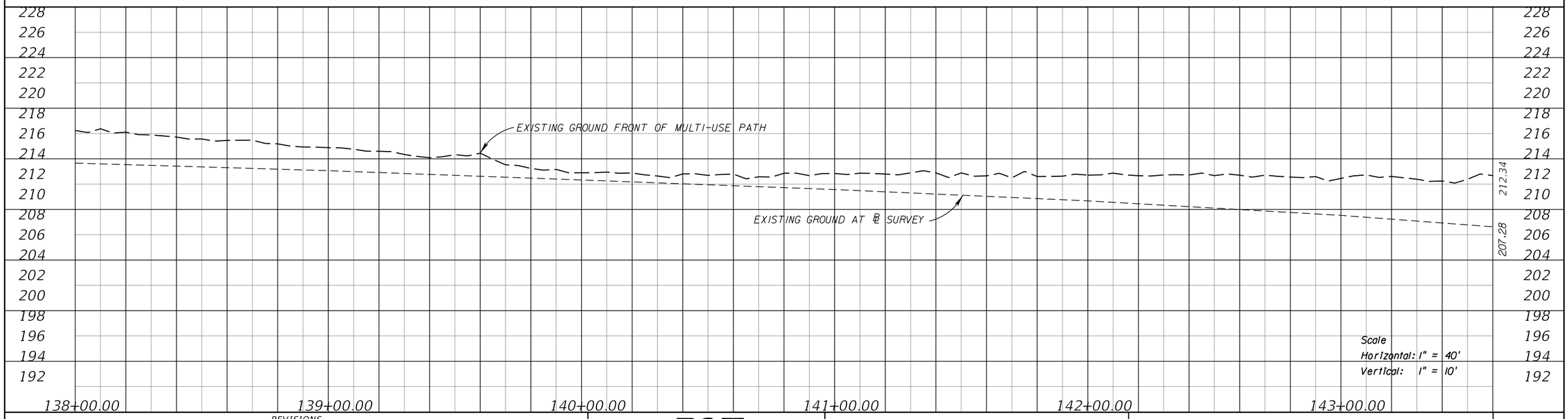

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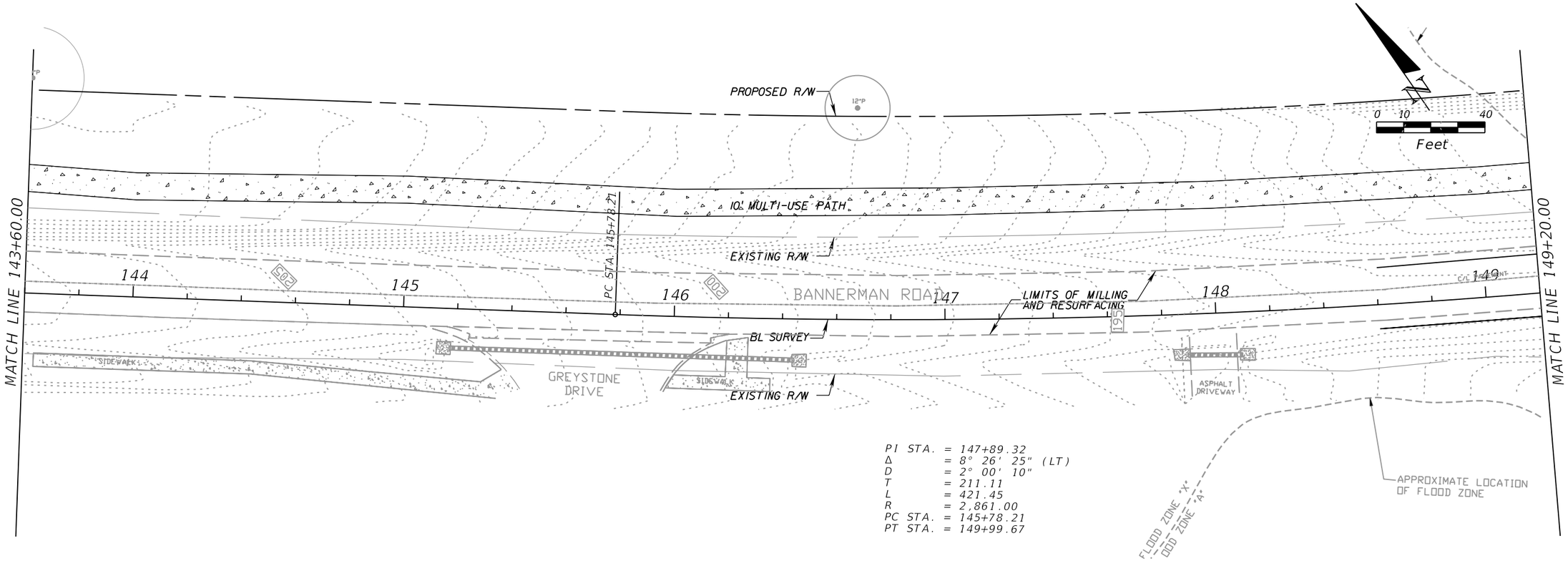

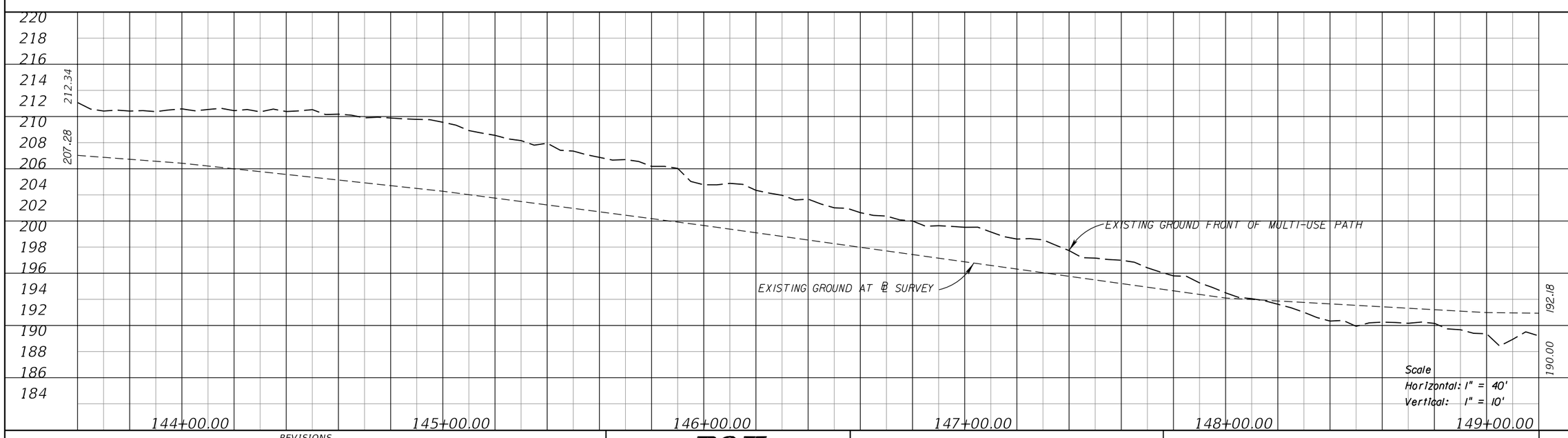

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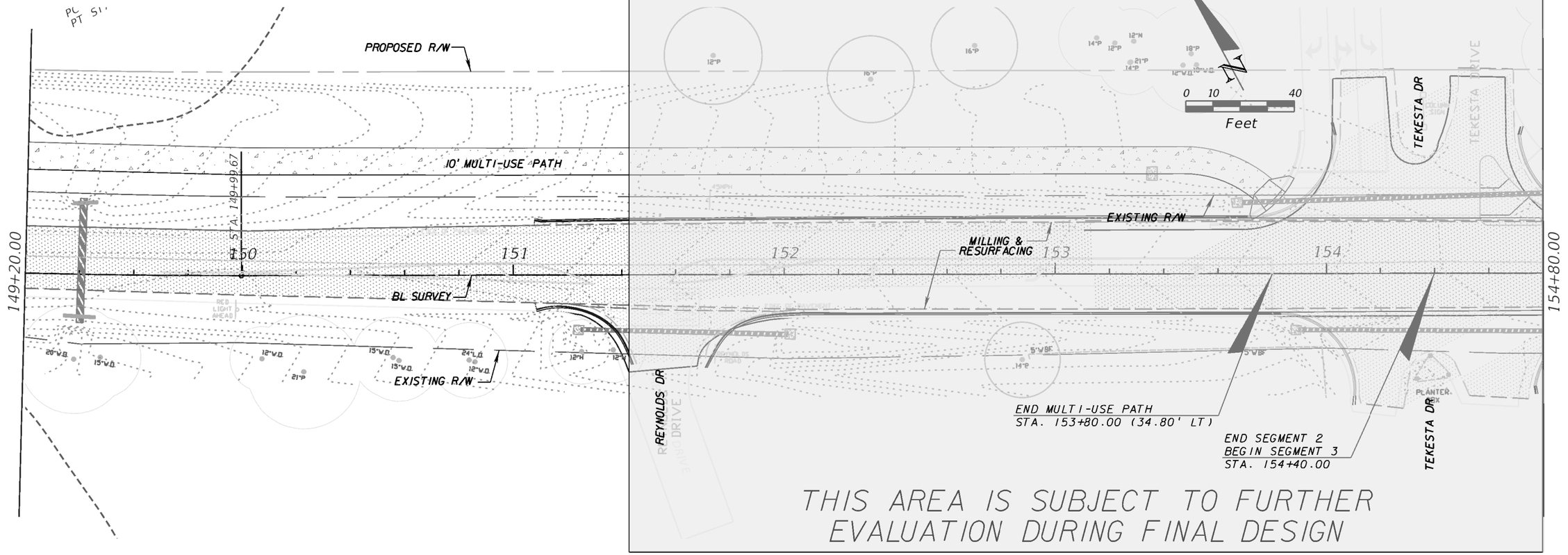

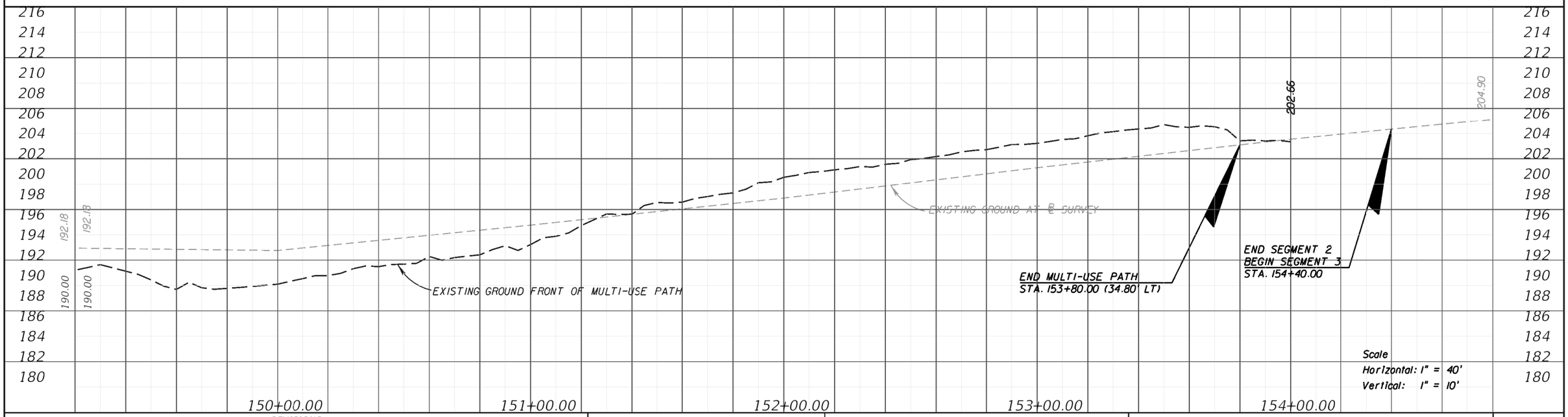

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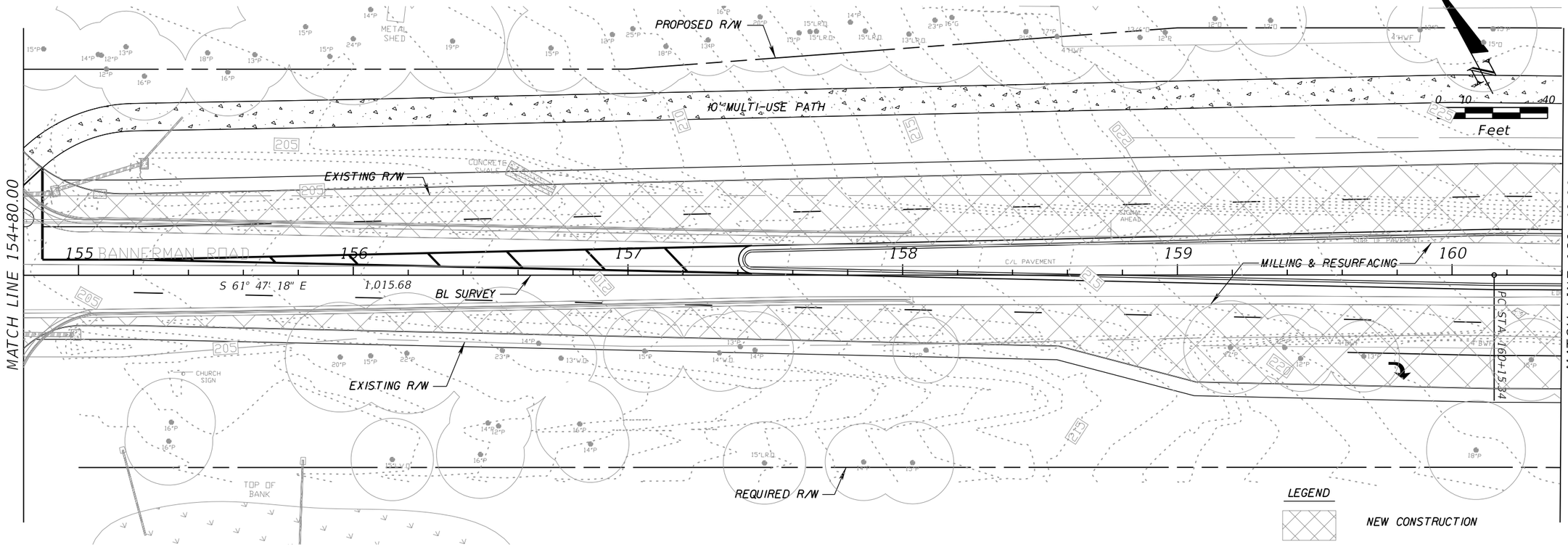

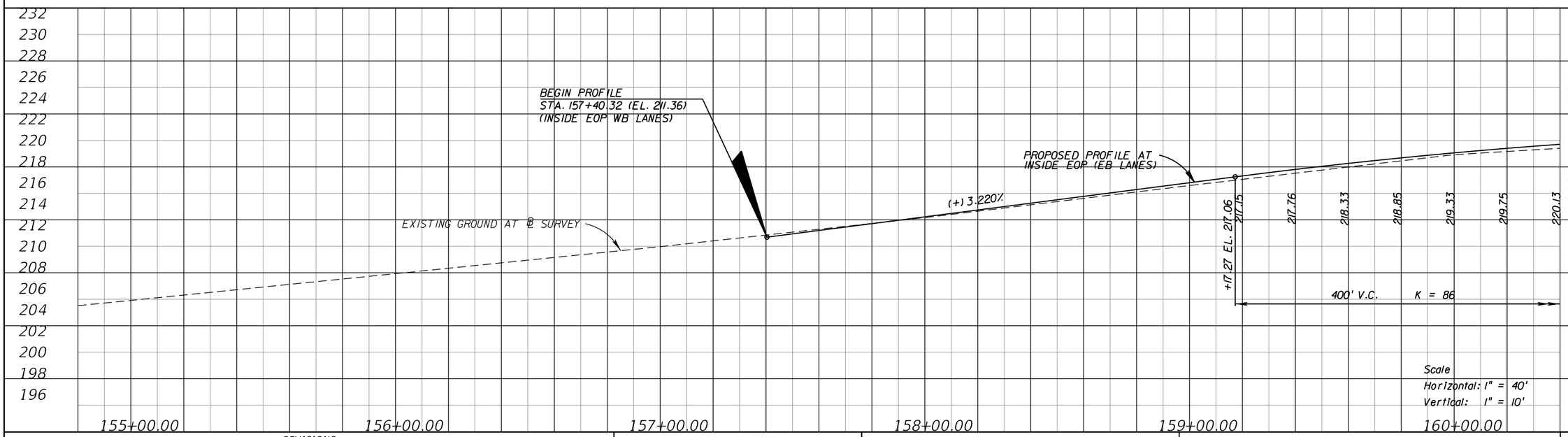

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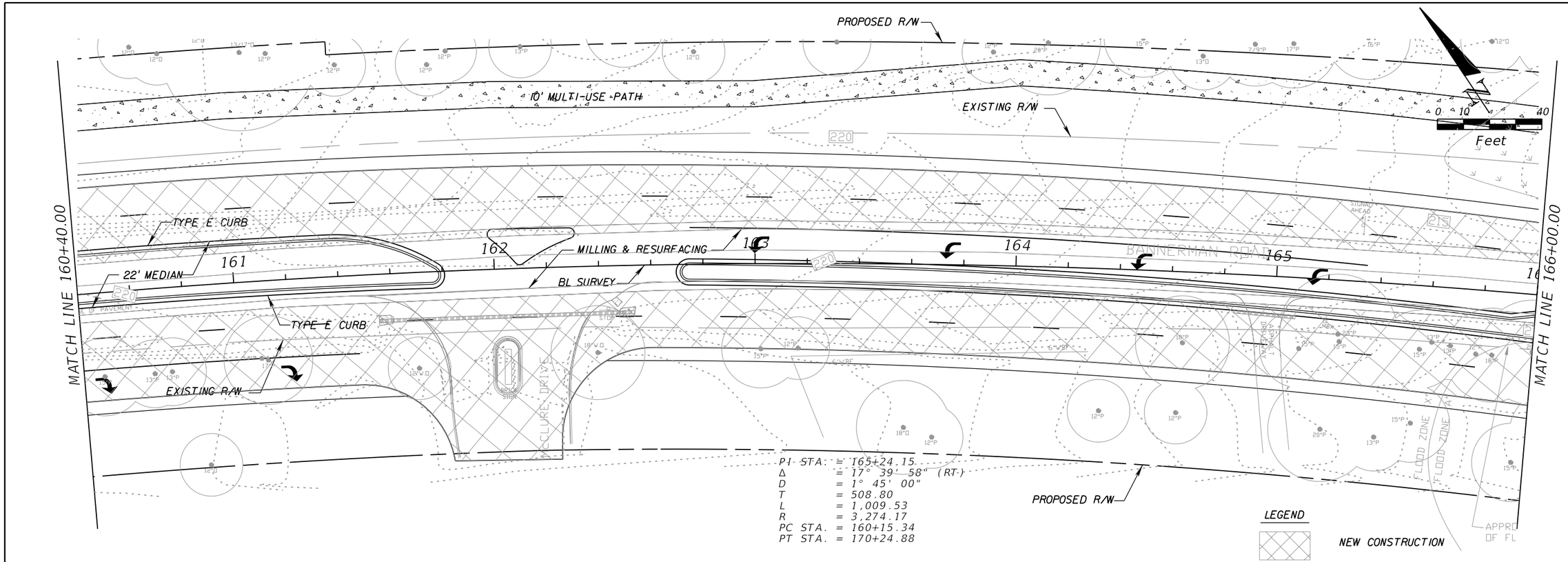

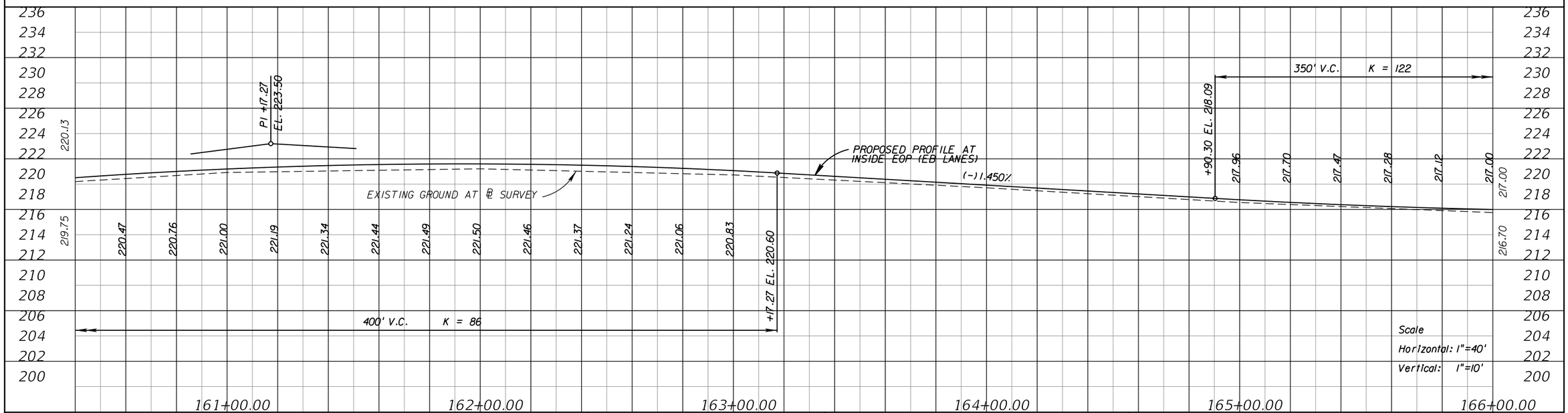

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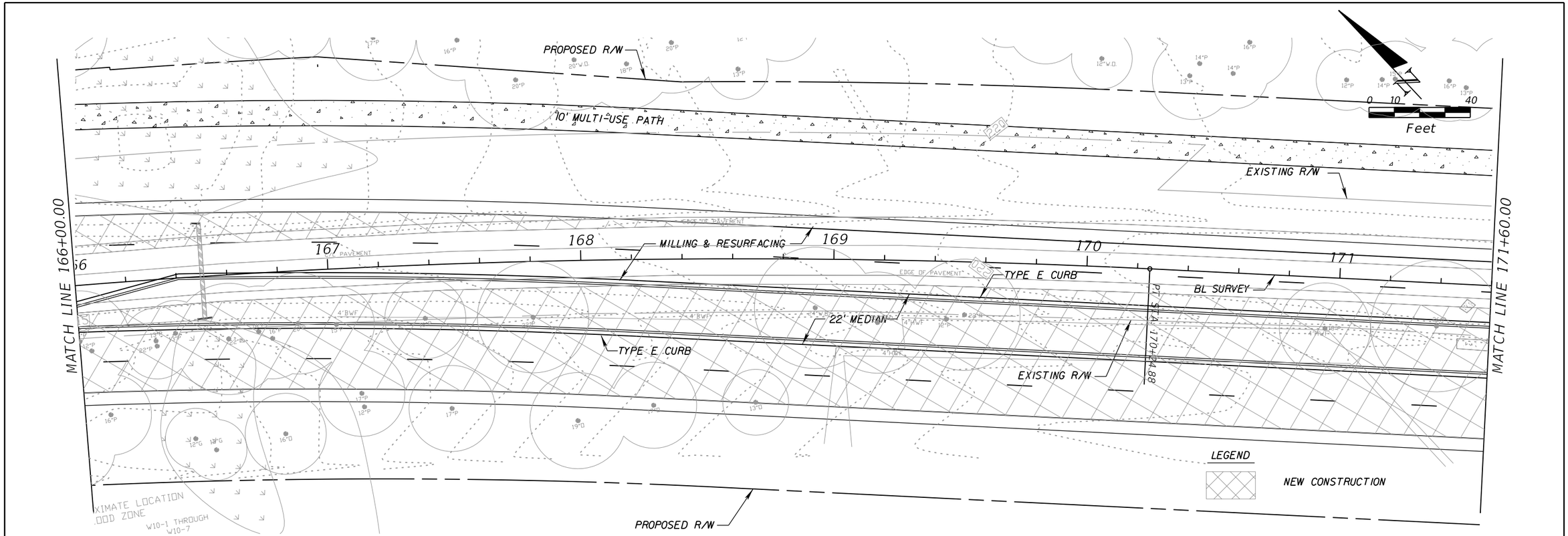

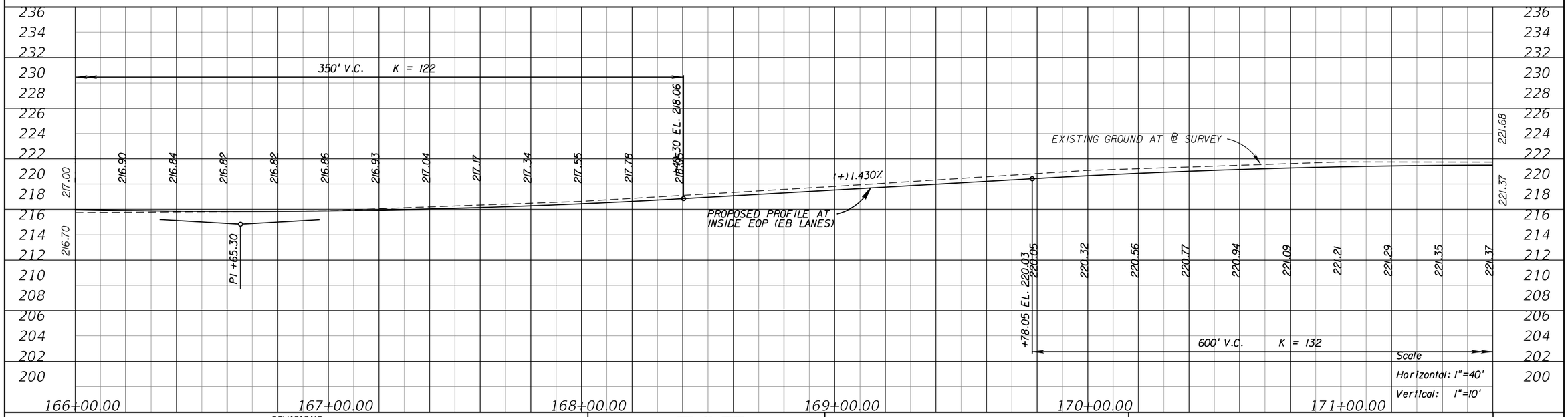

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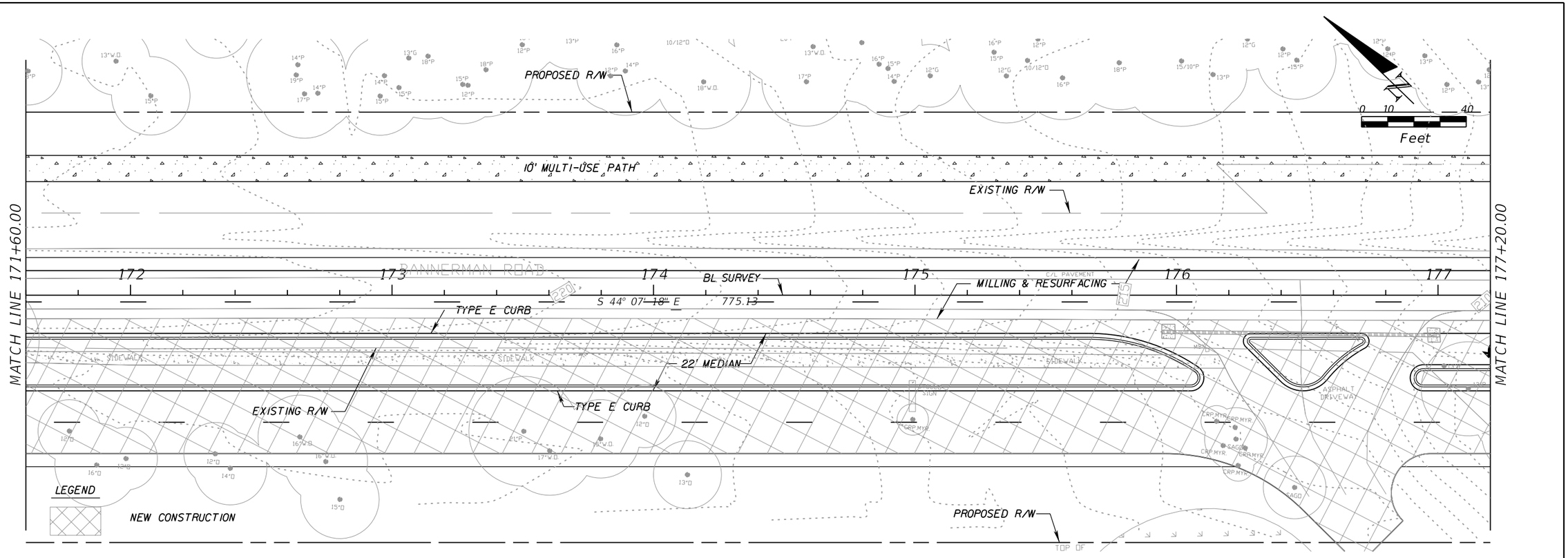

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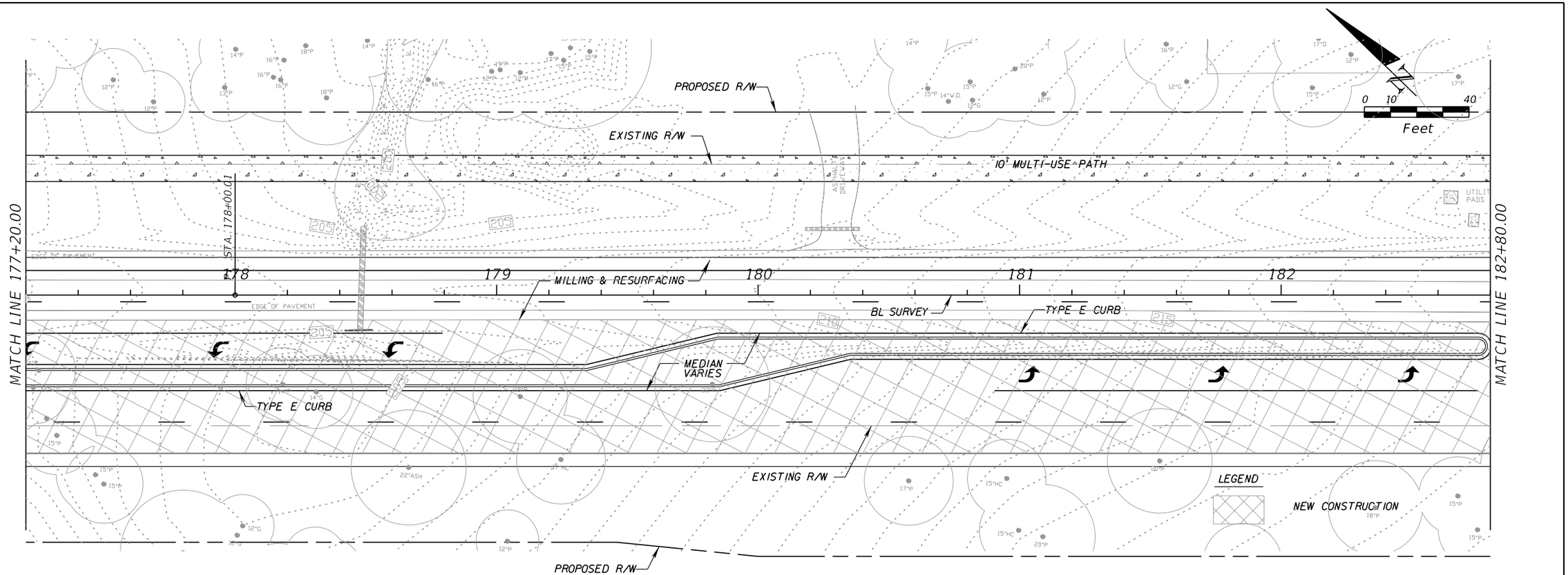
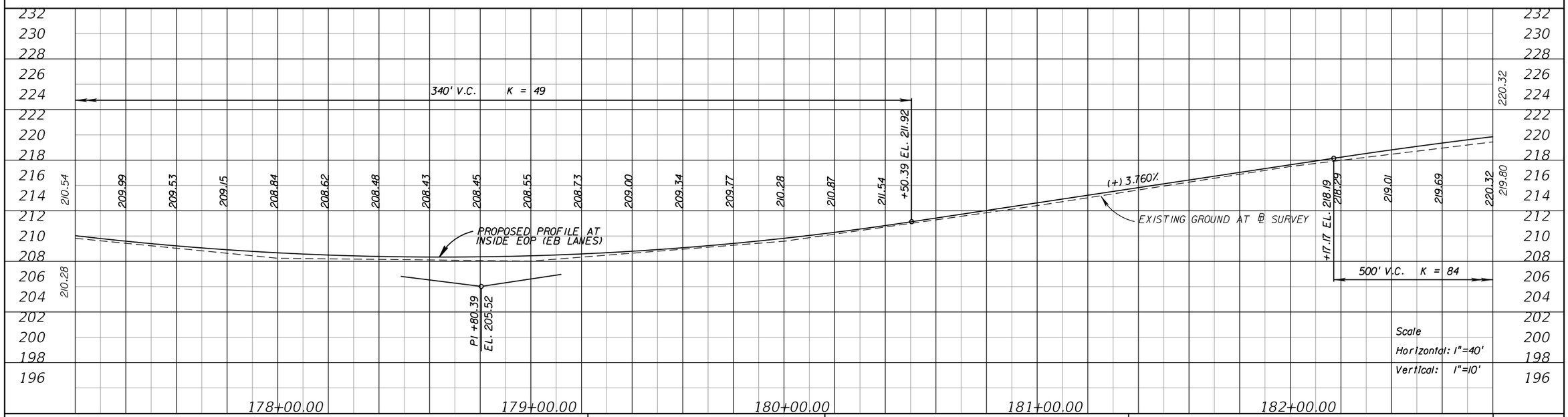
SHEET NO. 37





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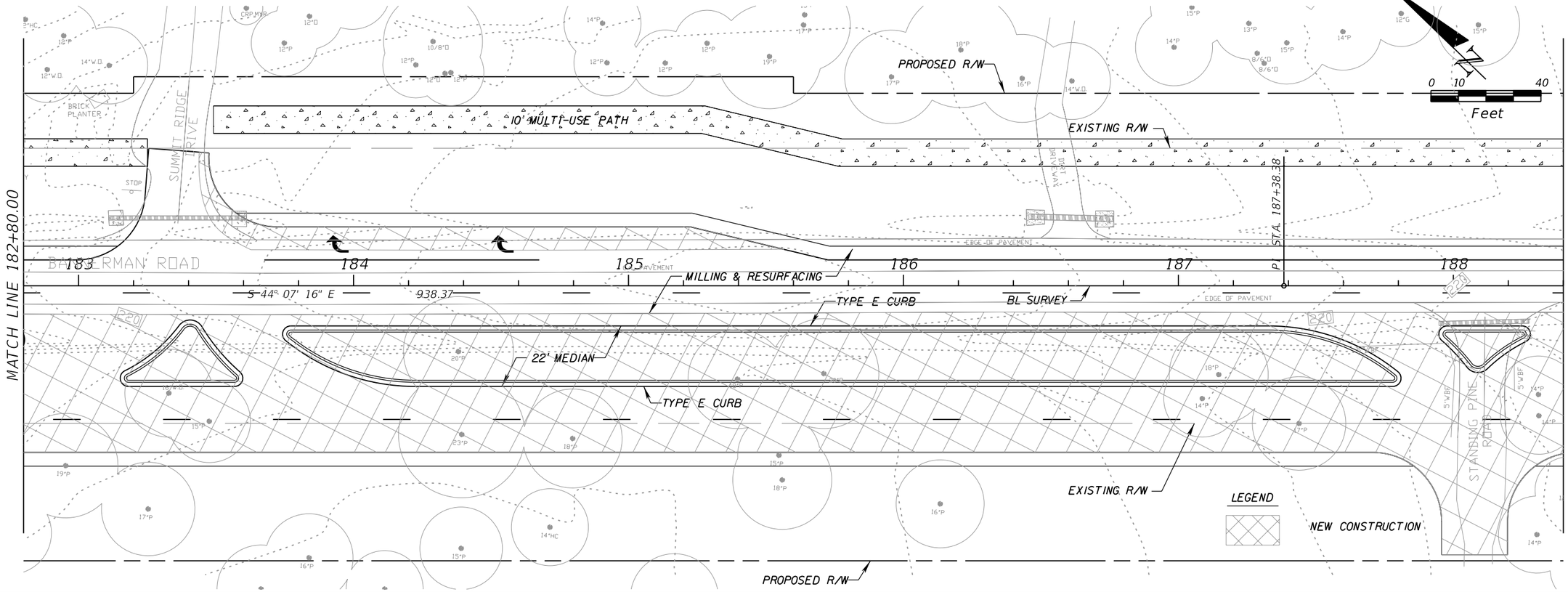

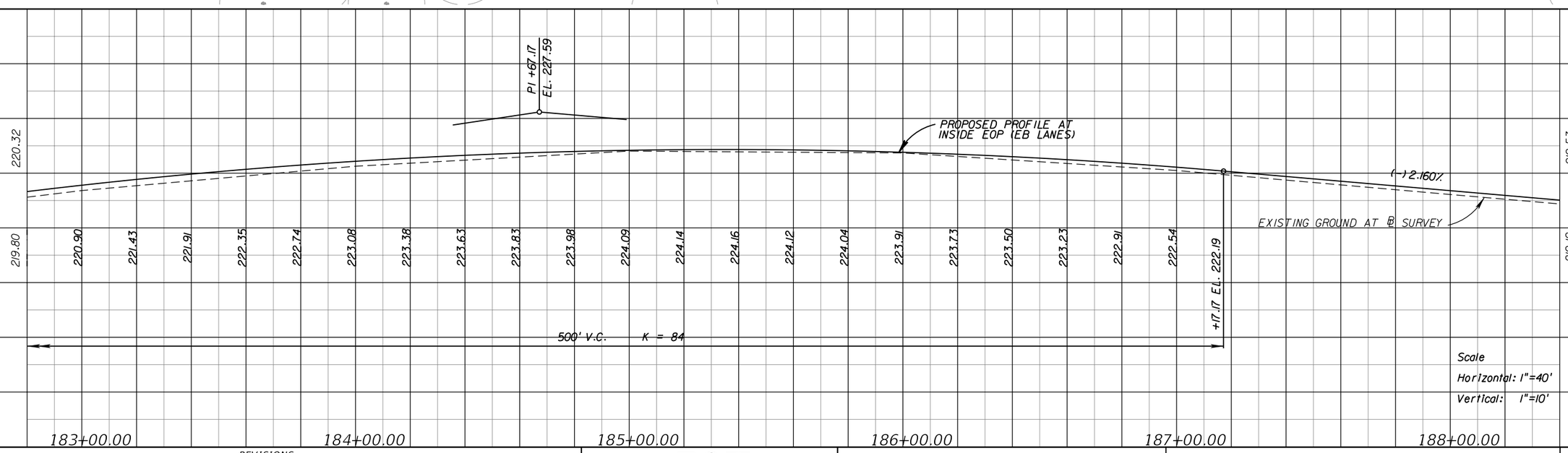

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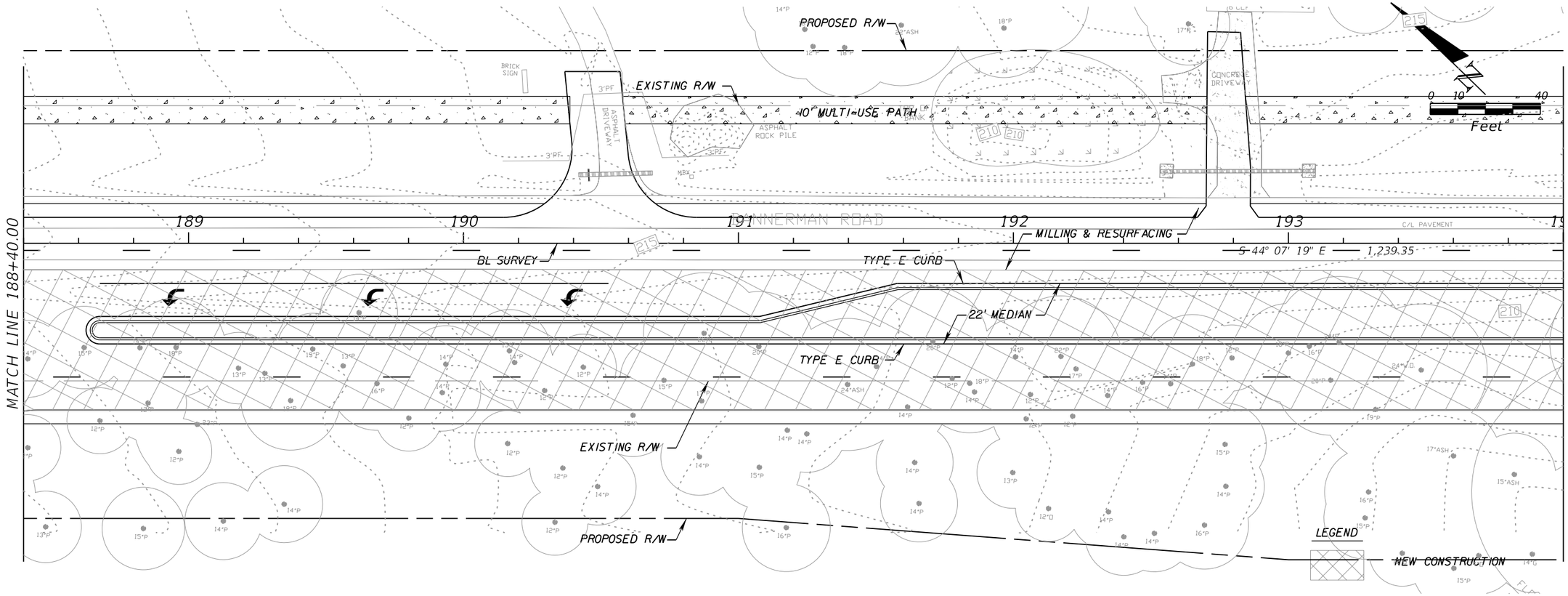

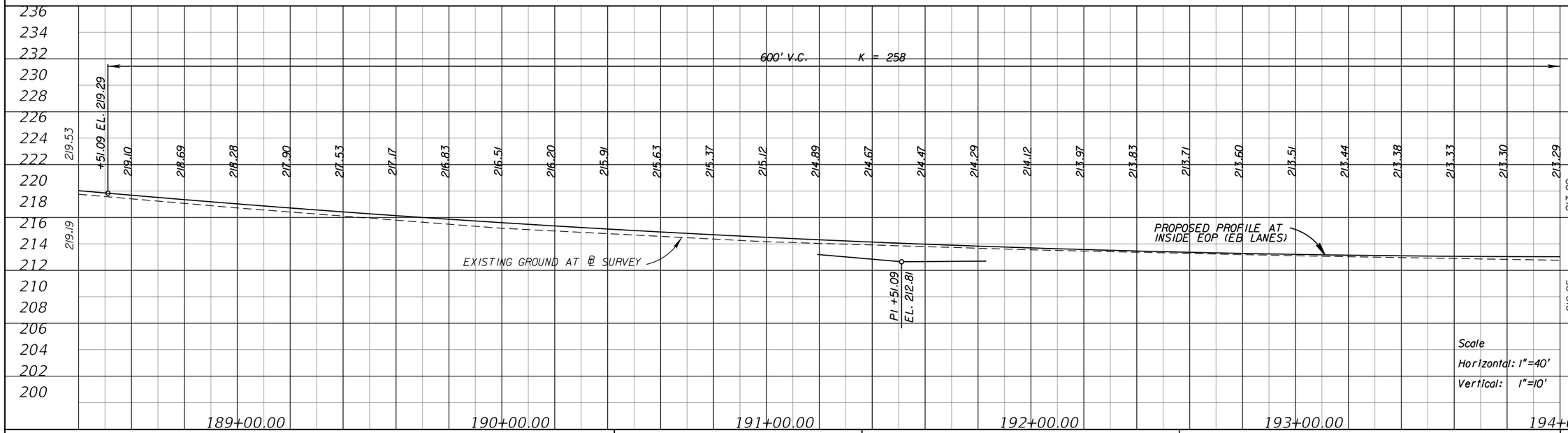

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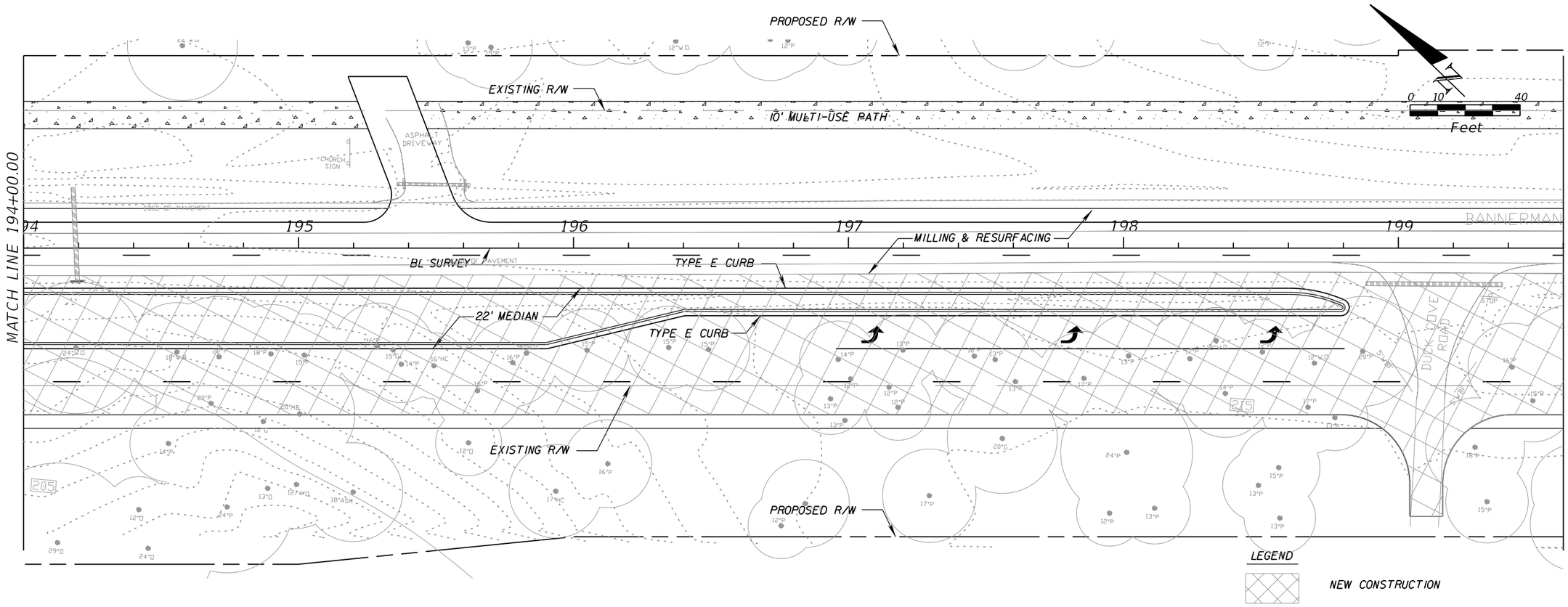

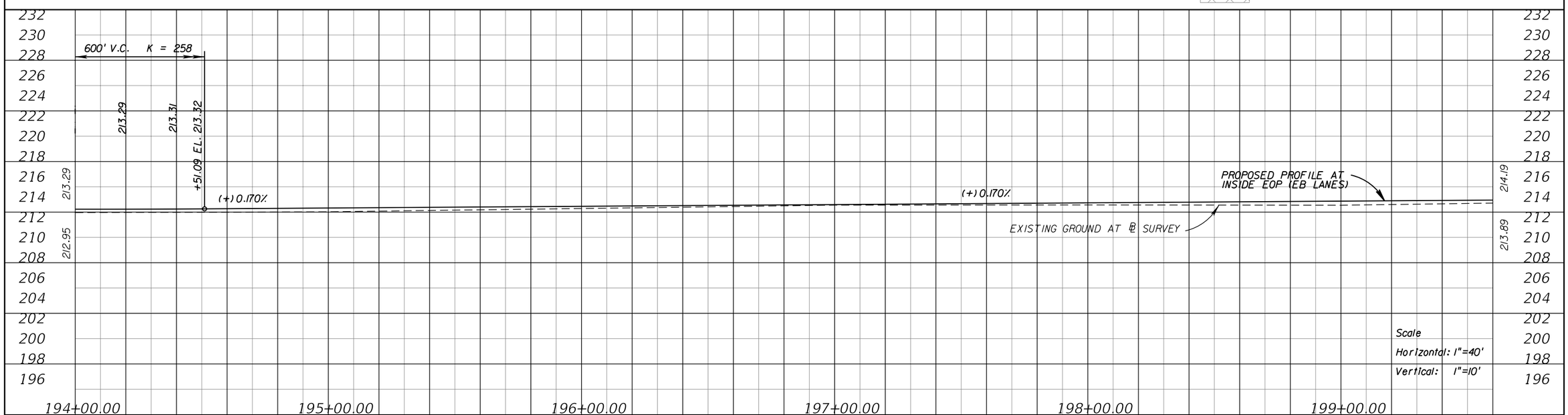

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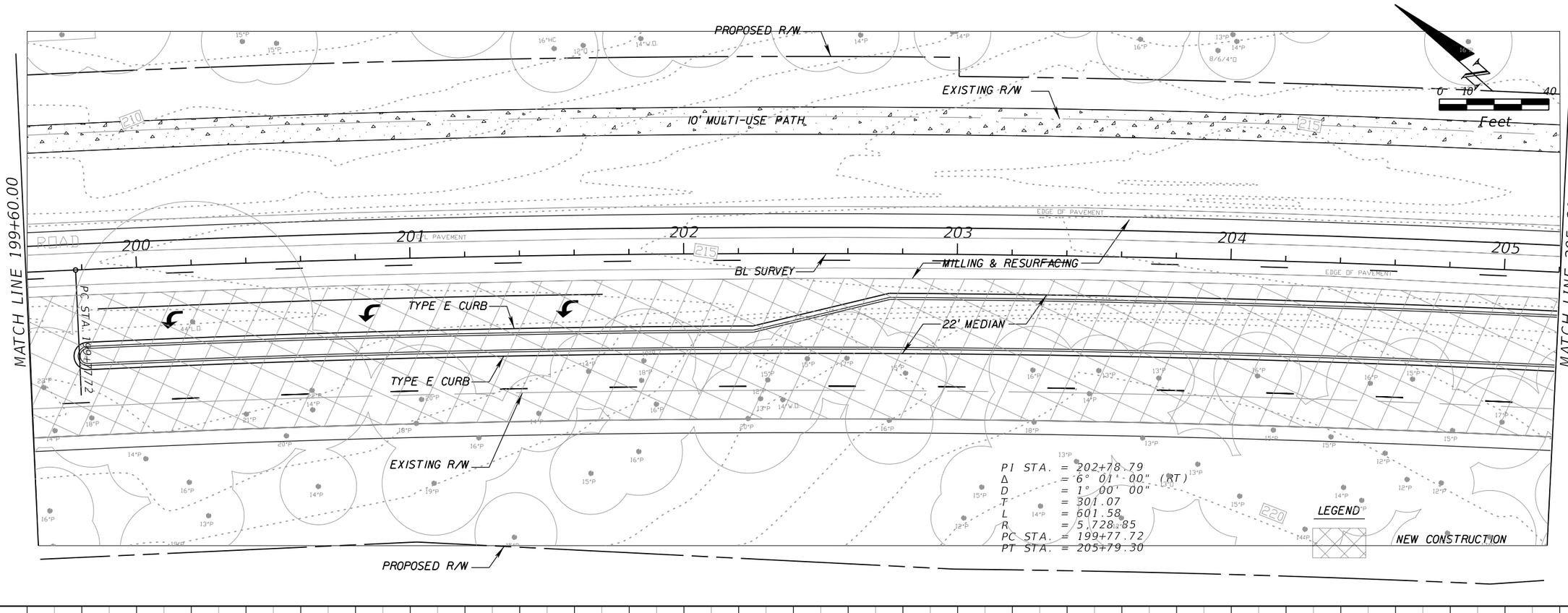

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Tallahassee, Florida 32308
850-558-2800
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
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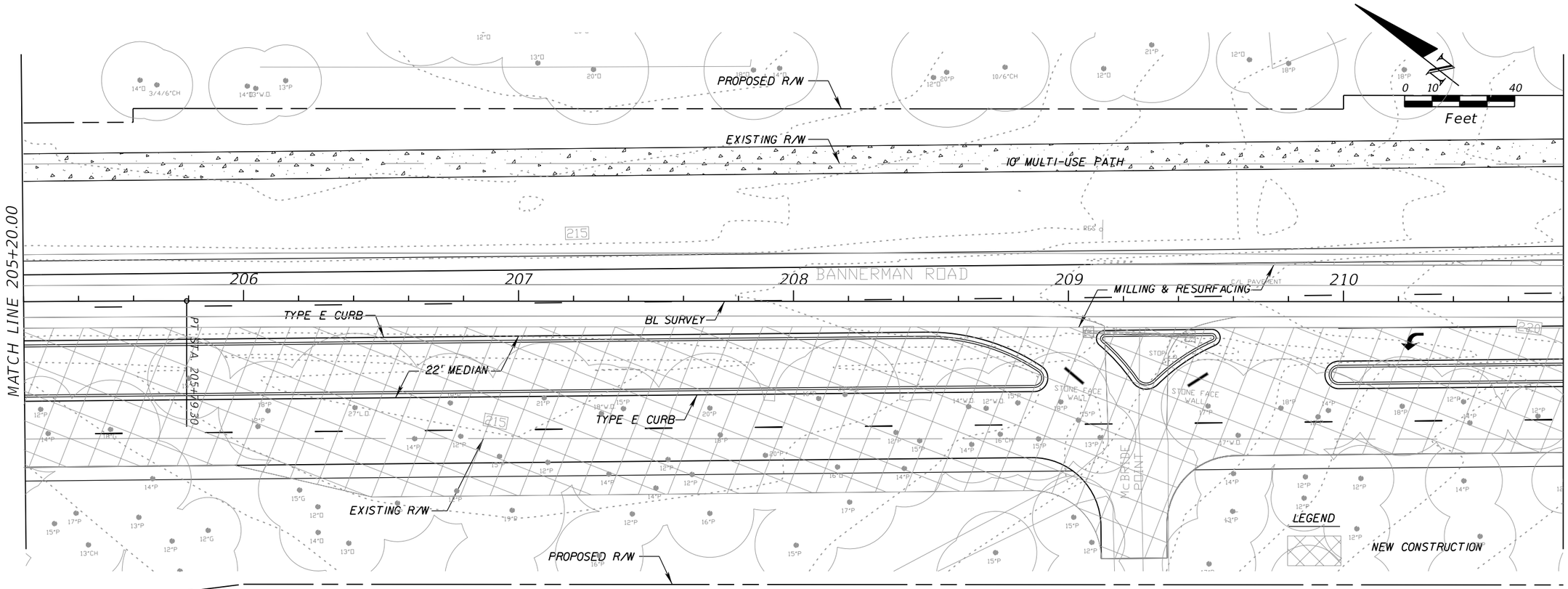
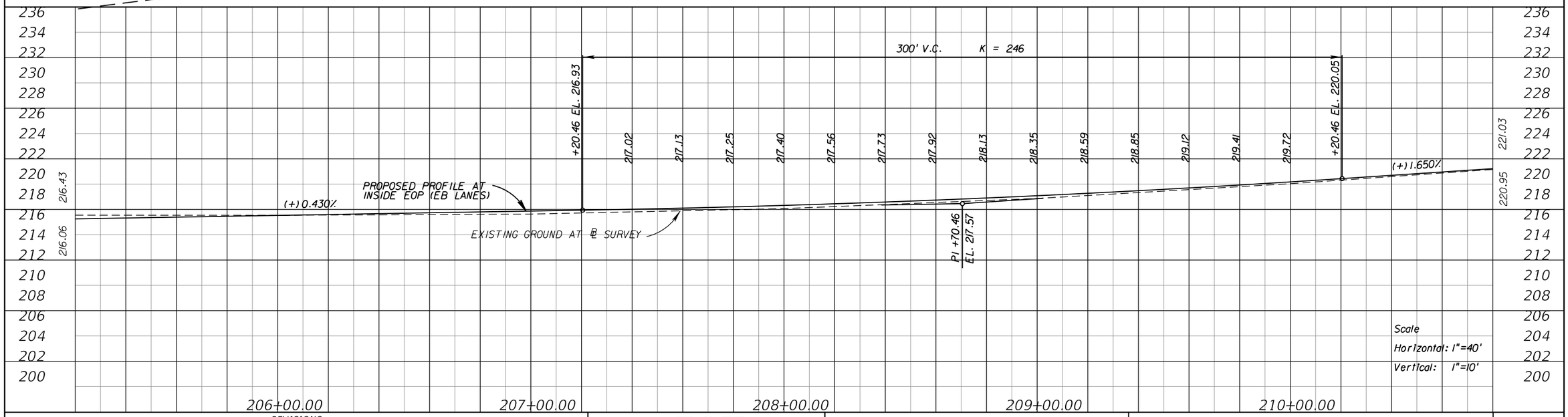
PLAN AND PROFILE

SHEET NO. 42





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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PLAN AND PROFILE

SHEET NO. 43

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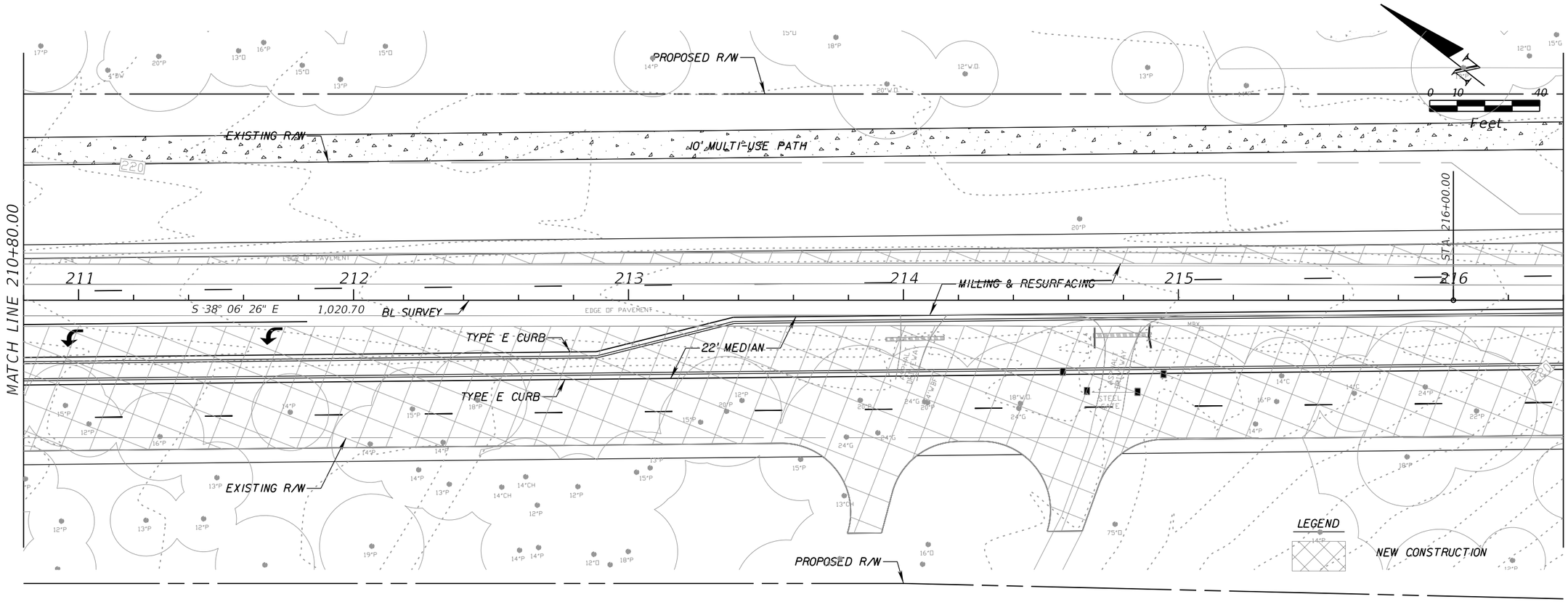

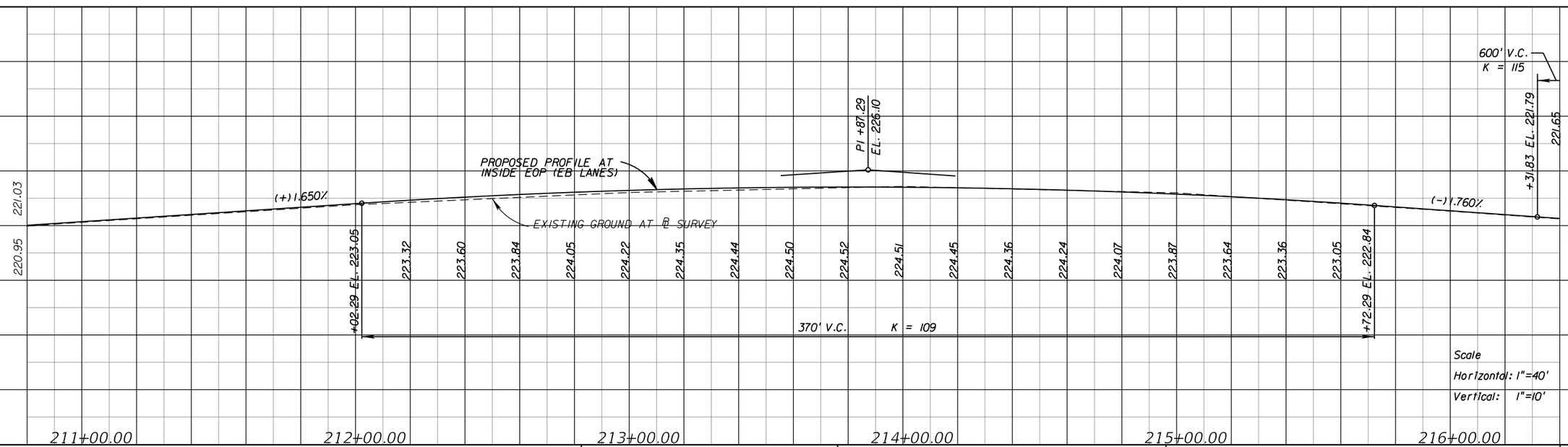

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DATE	DESCRIPTION	DATE	DESCRIPTION

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PLAN AND PROFILE

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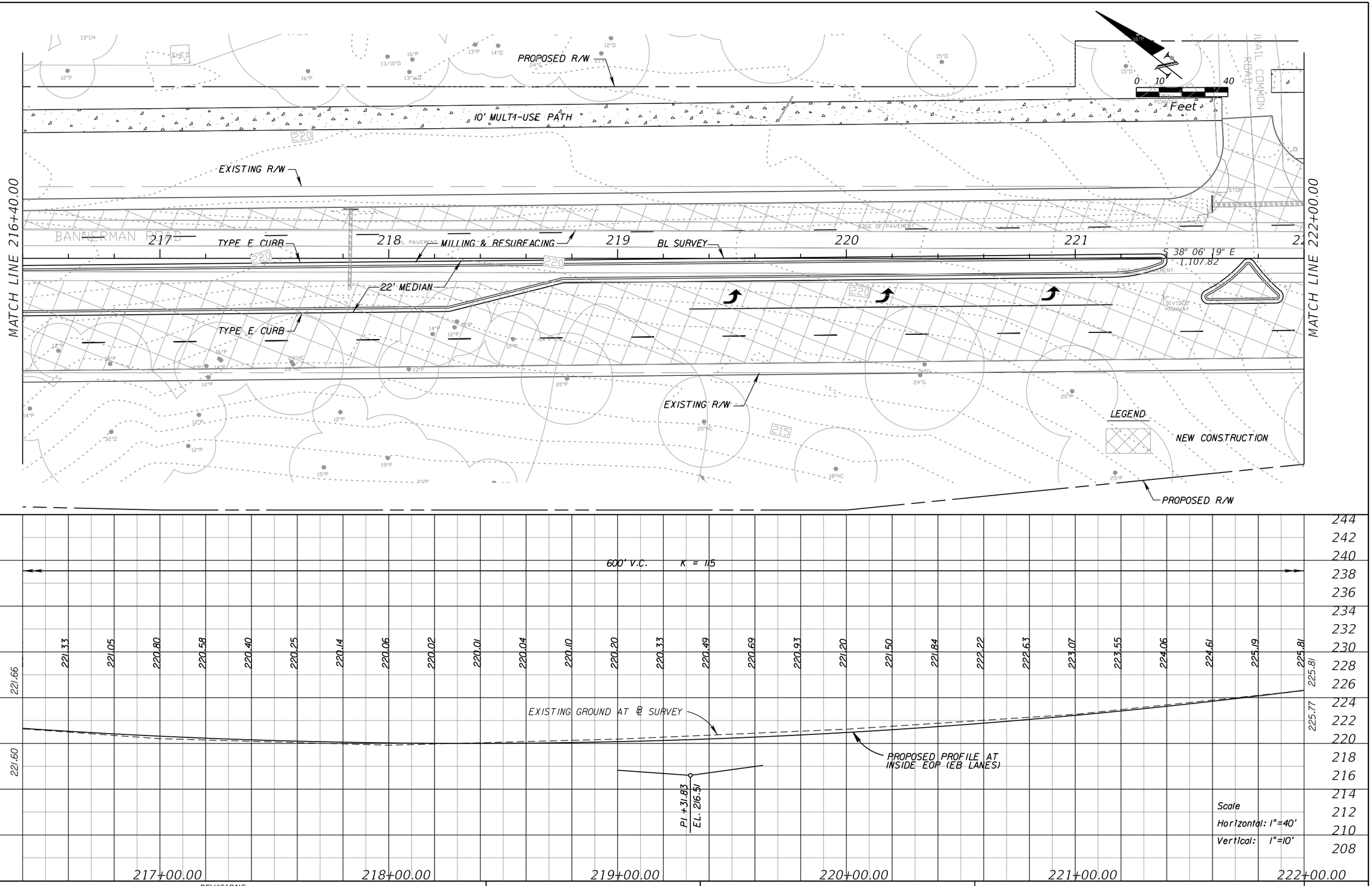

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DATE	DESCRIPTION	DATE	DESCRIPTION

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PLAN AND PROFILE

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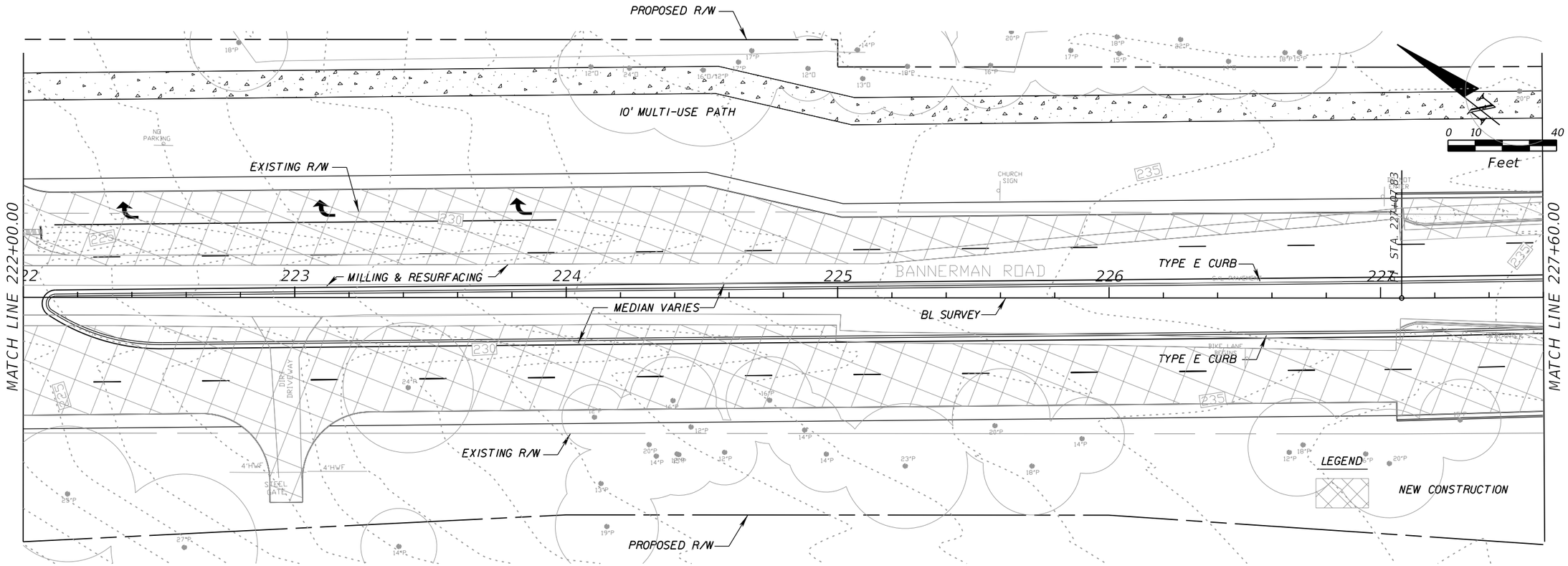

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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PLAN AND PROFILE

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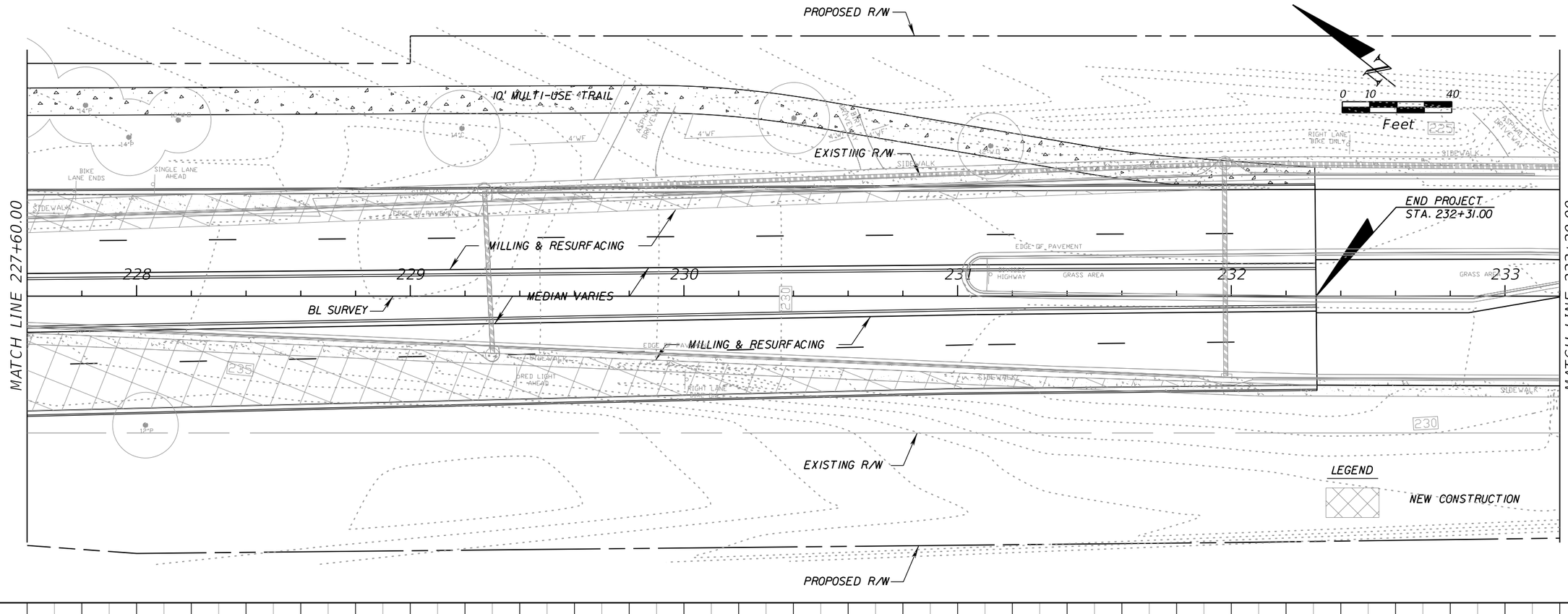

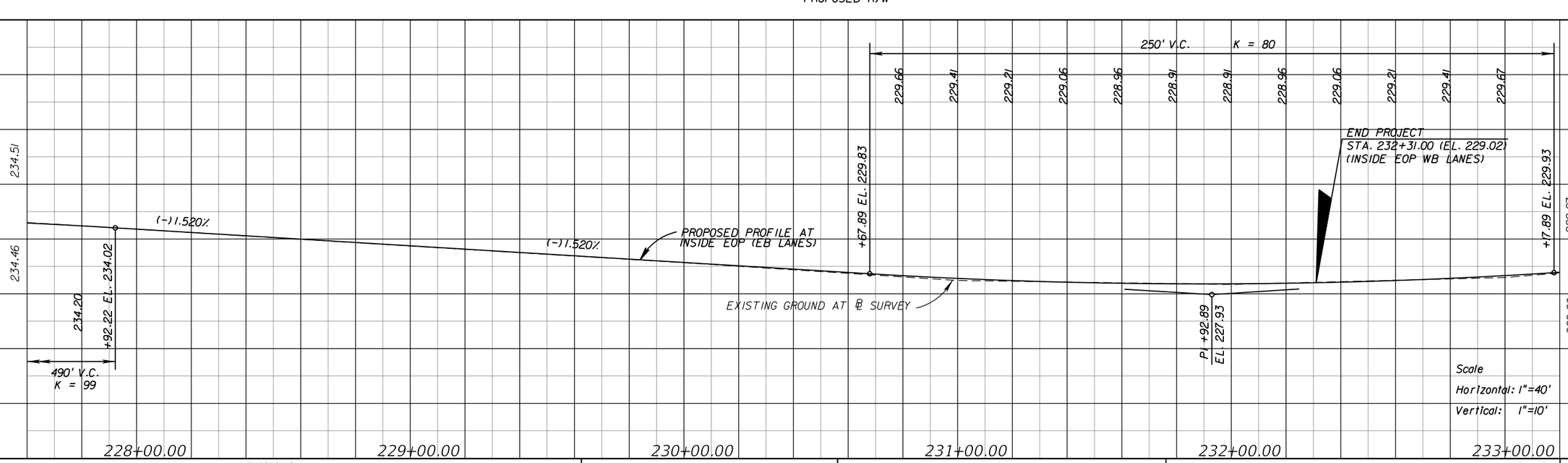

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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PLAN AND PROFILE

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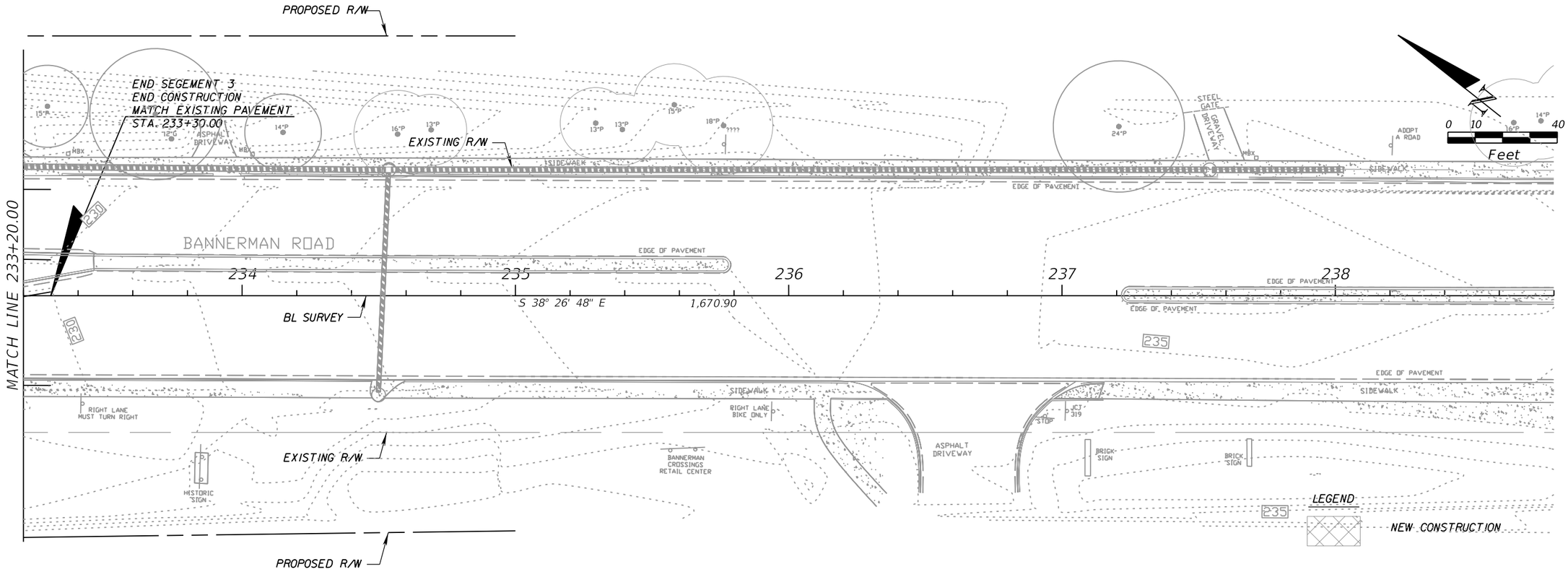

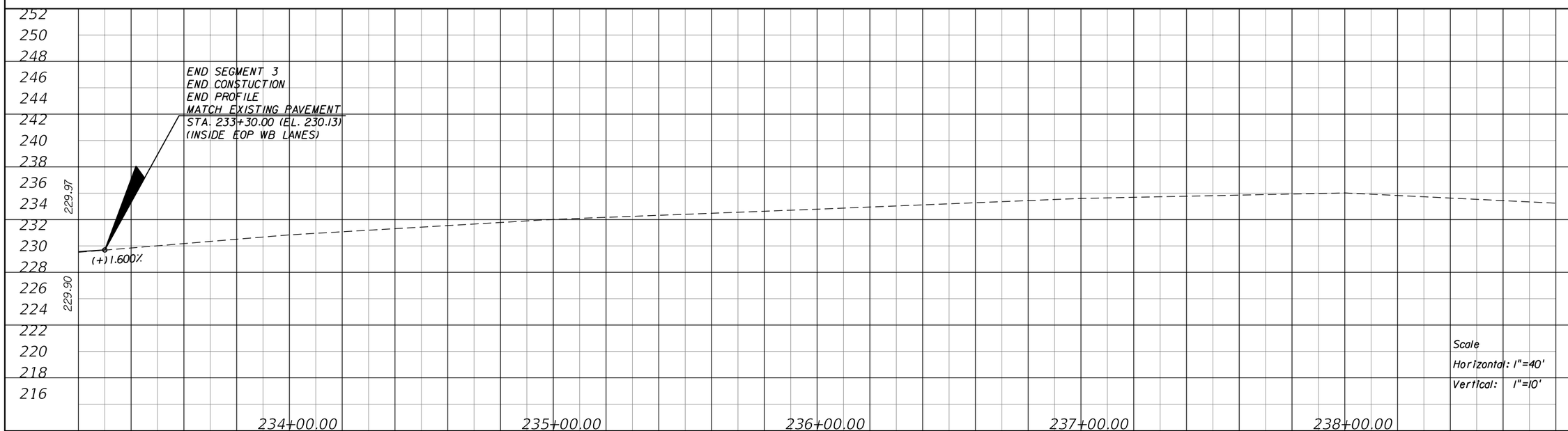

REVISIONS			
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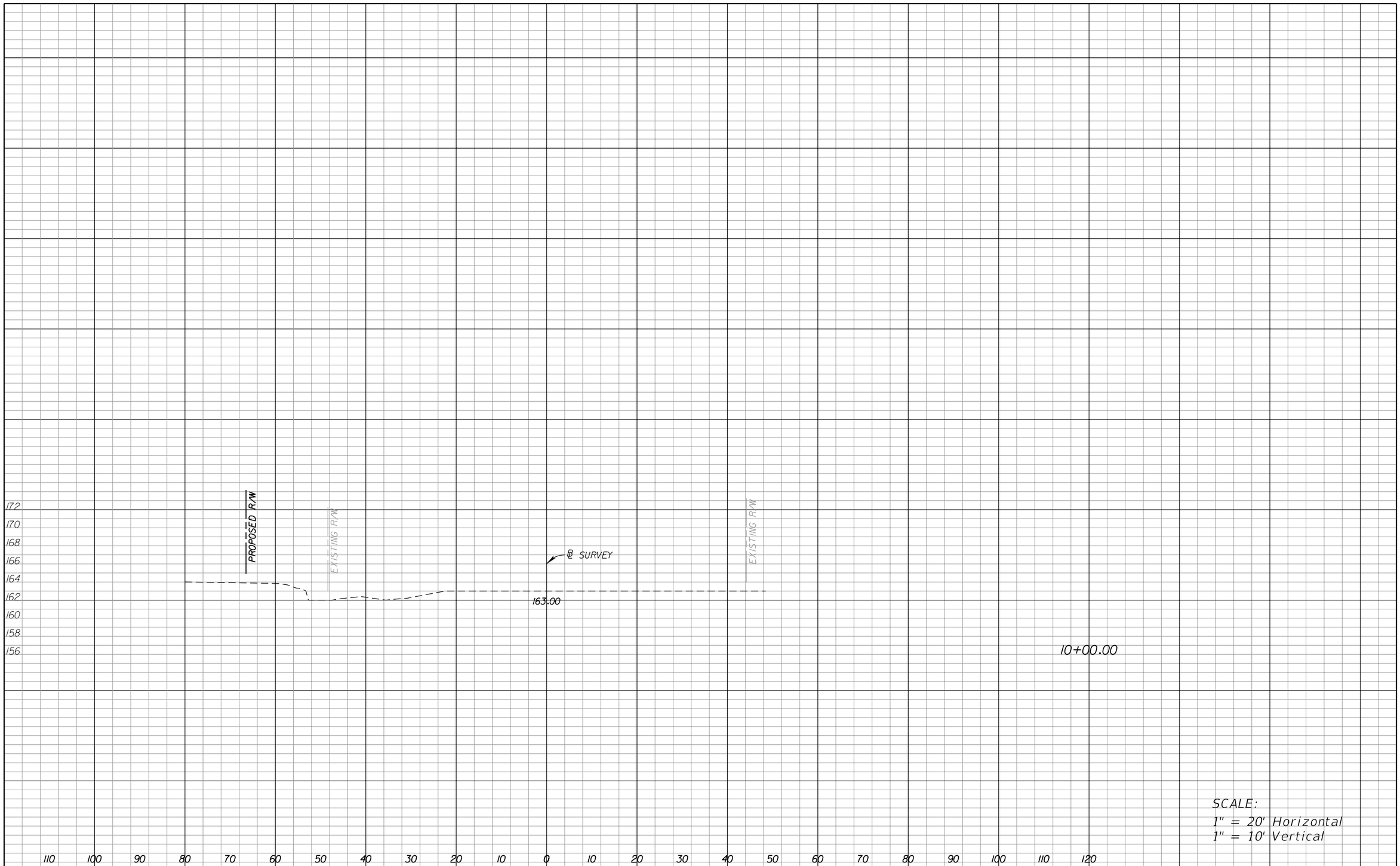
PLAN AND PROFILE

SHEET NO. 48



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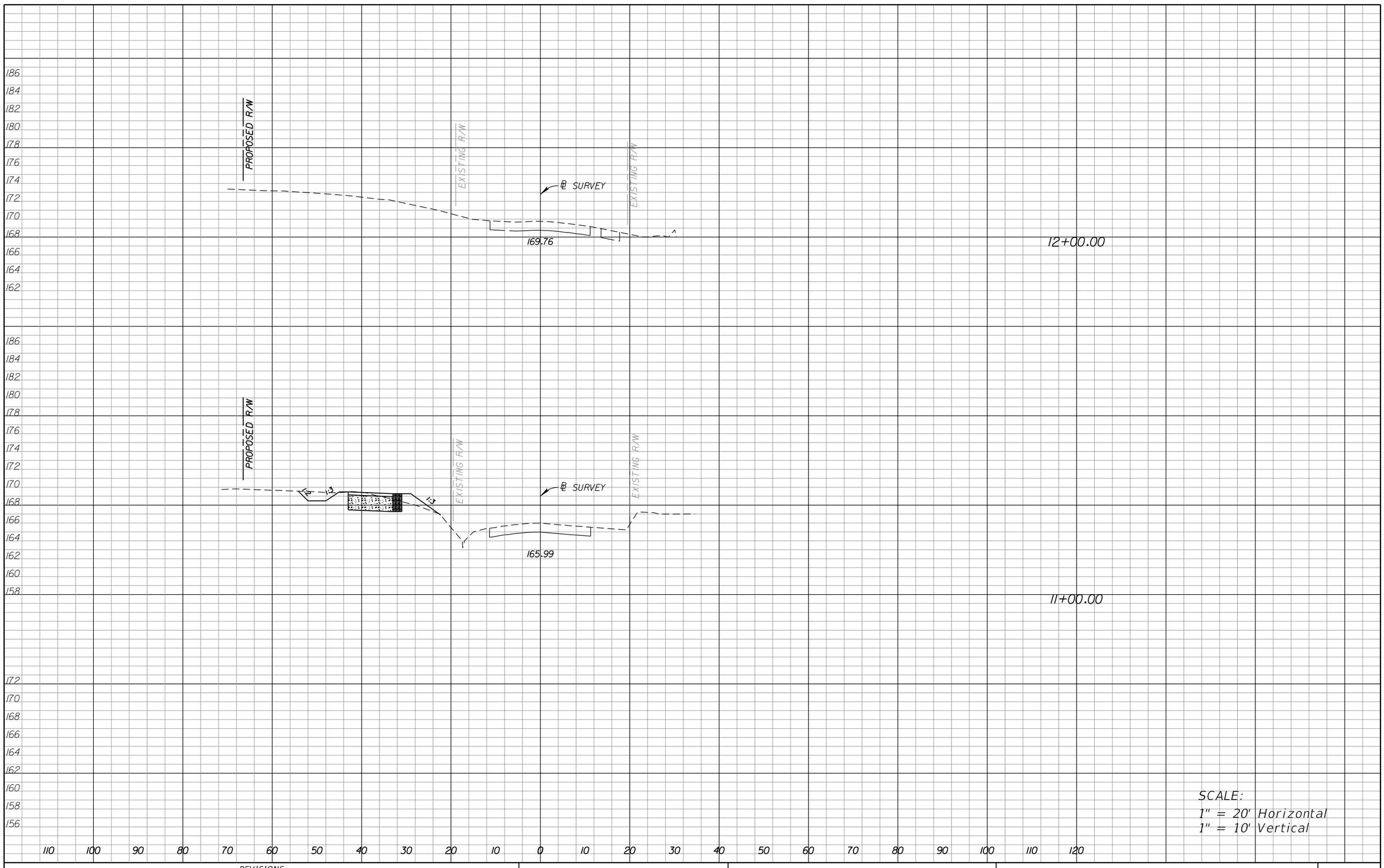
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 49



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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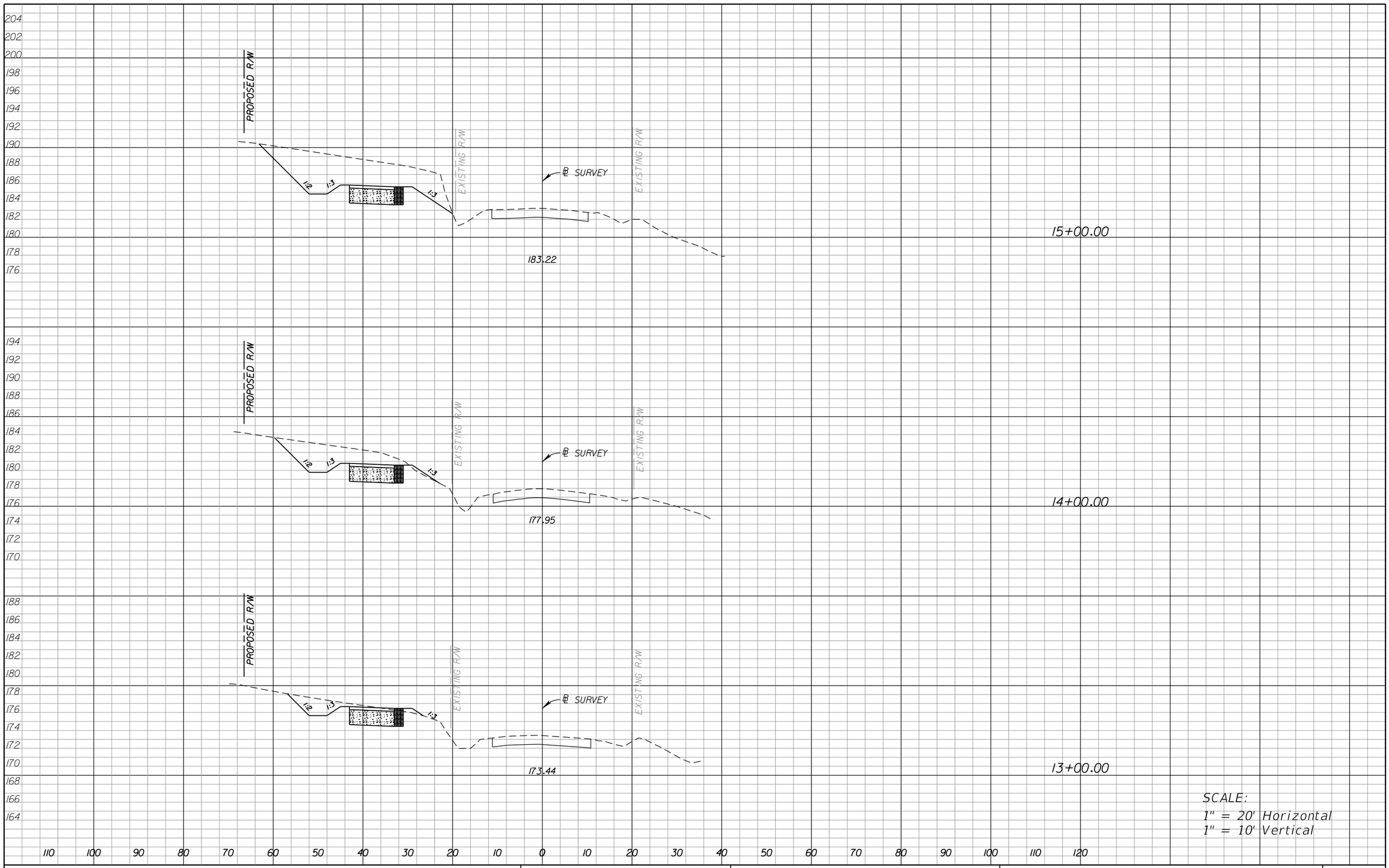

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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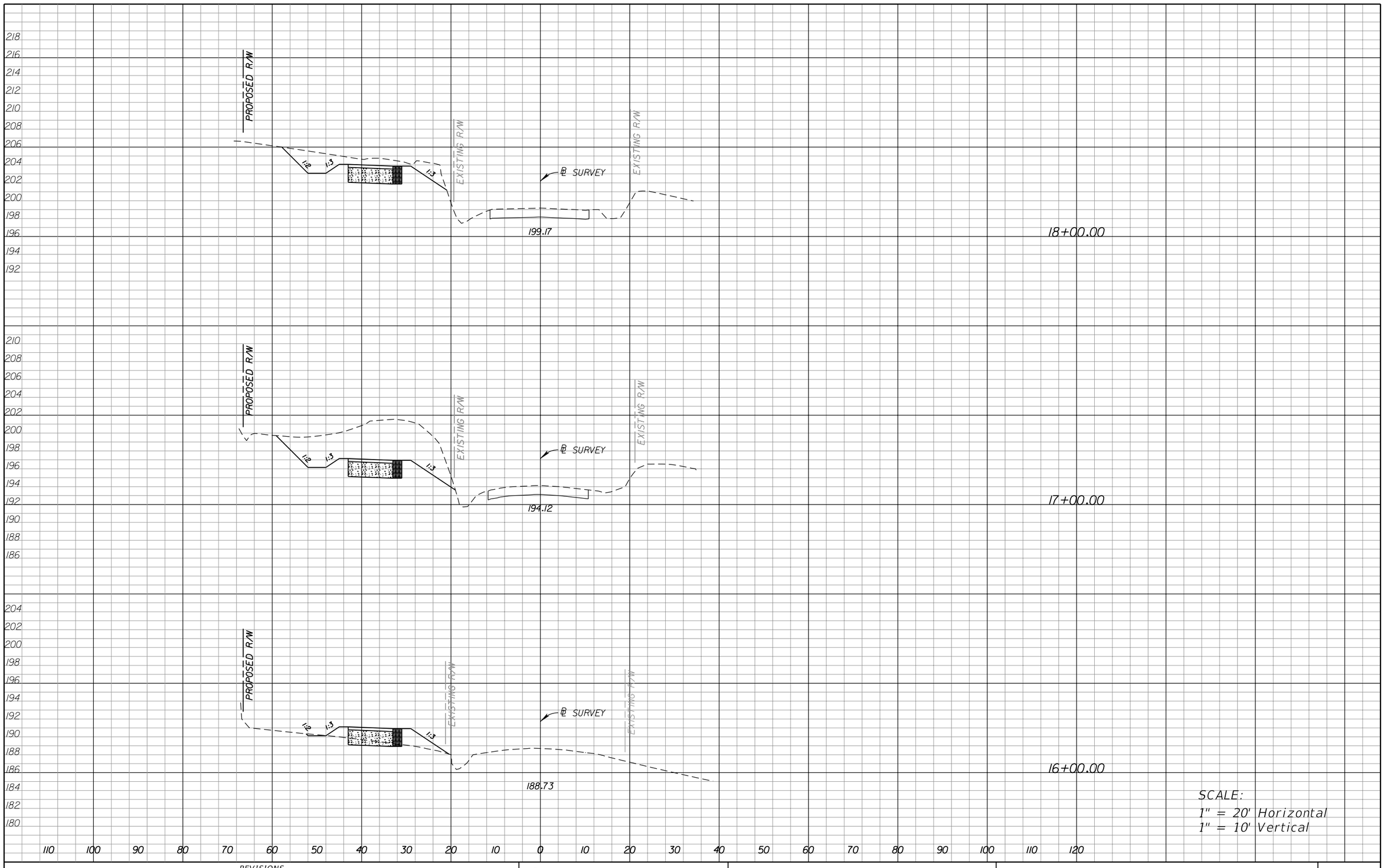

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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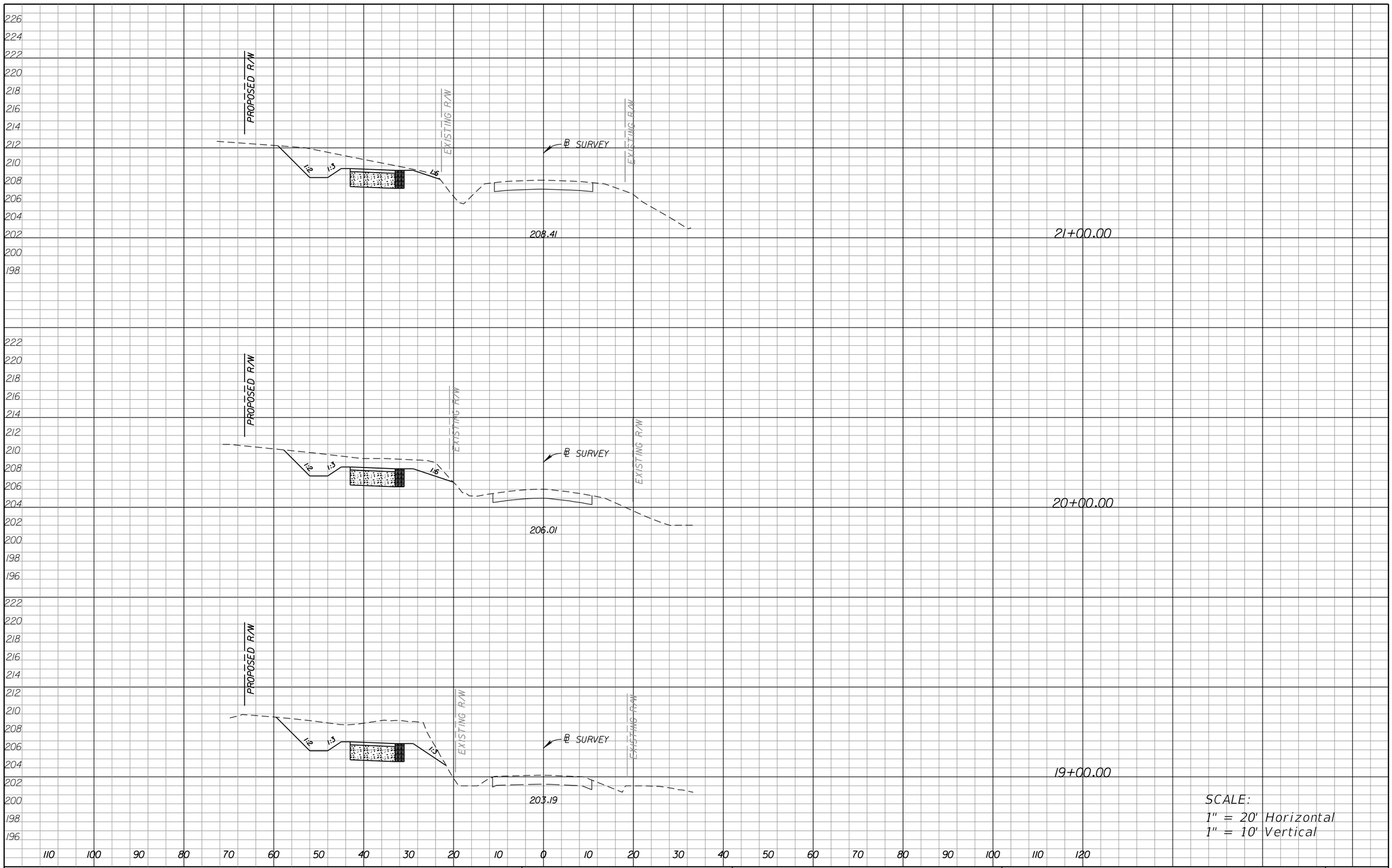

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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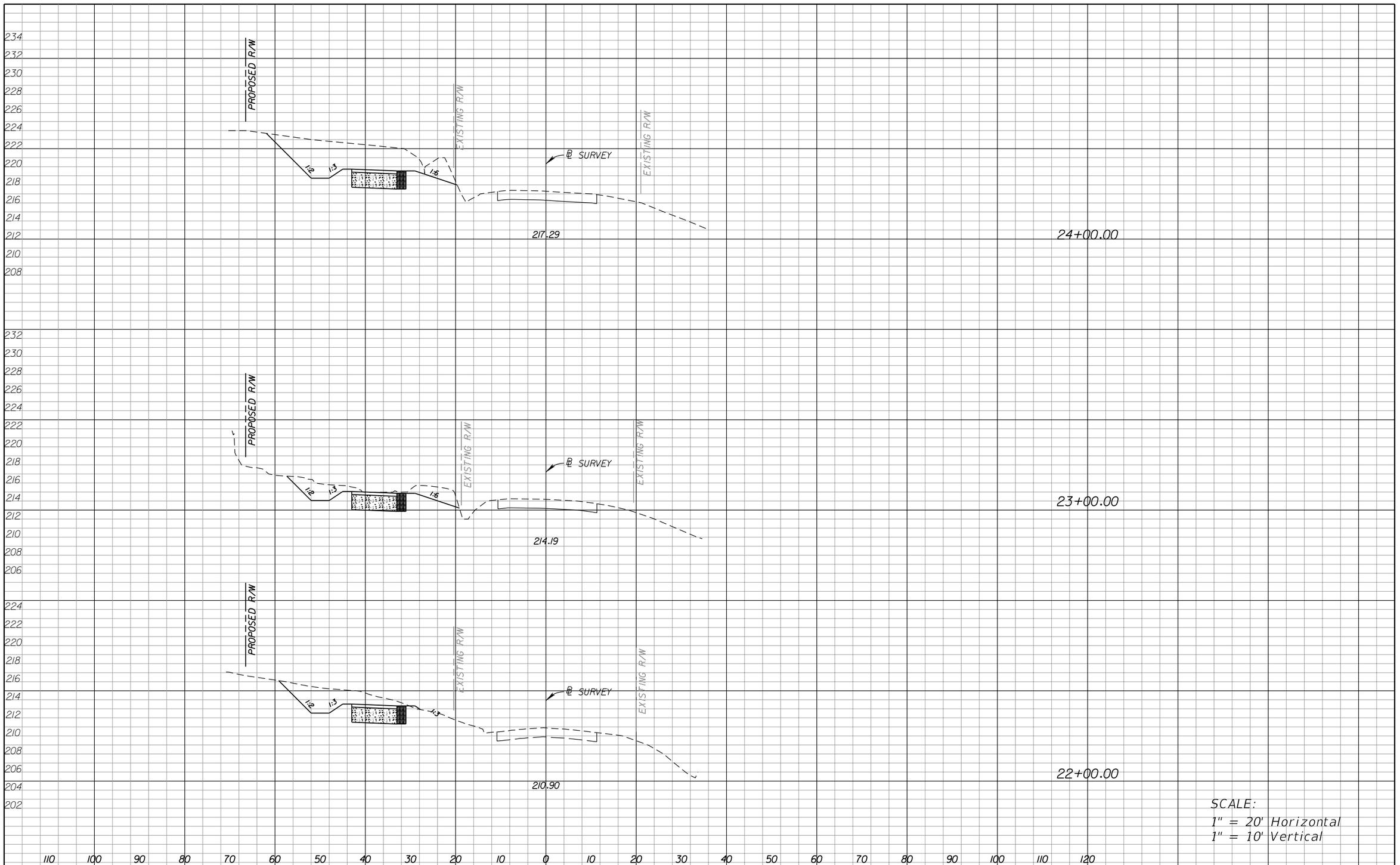

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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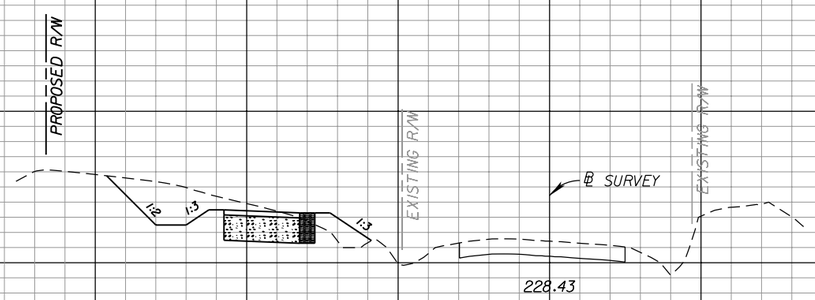

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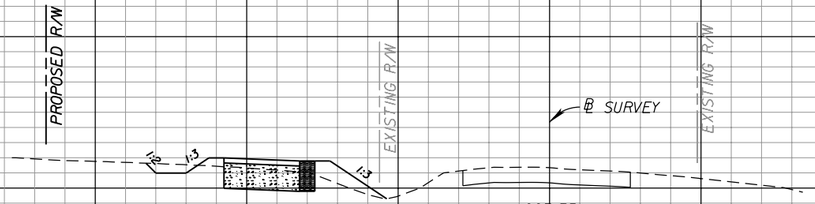

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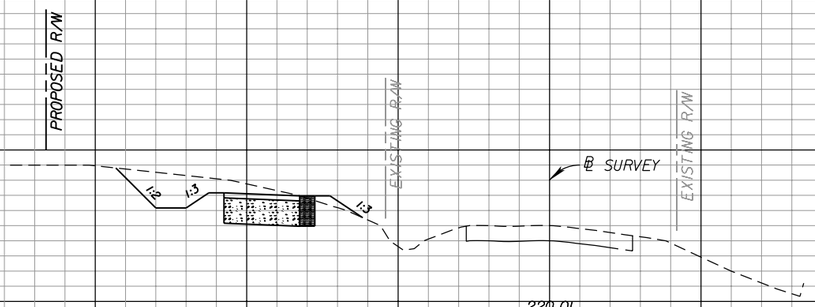

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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CROSS SECTIONS

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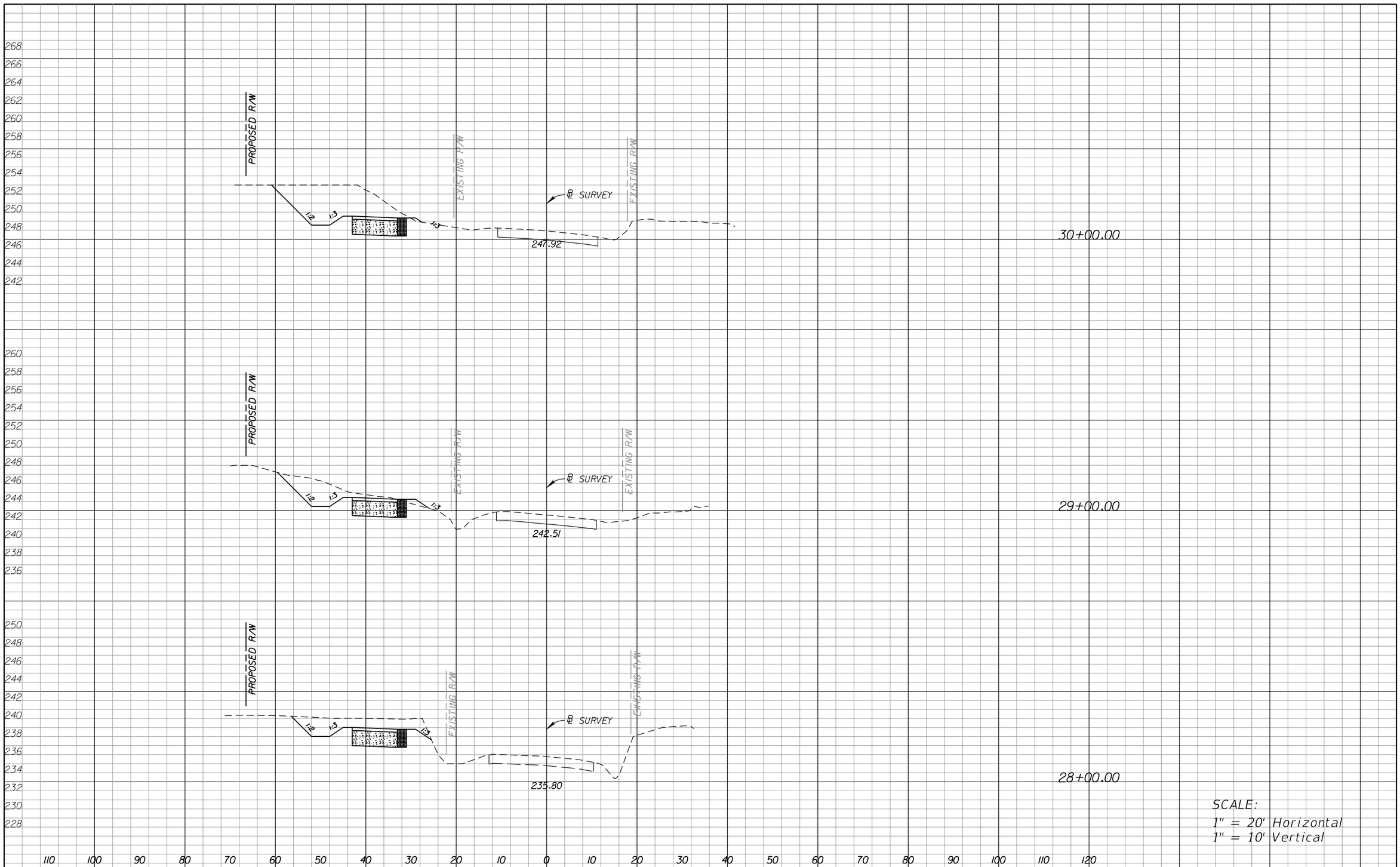

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DATE	DESCRIPTION	DATE	DESCRIPTION

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CROSS SECTIONS

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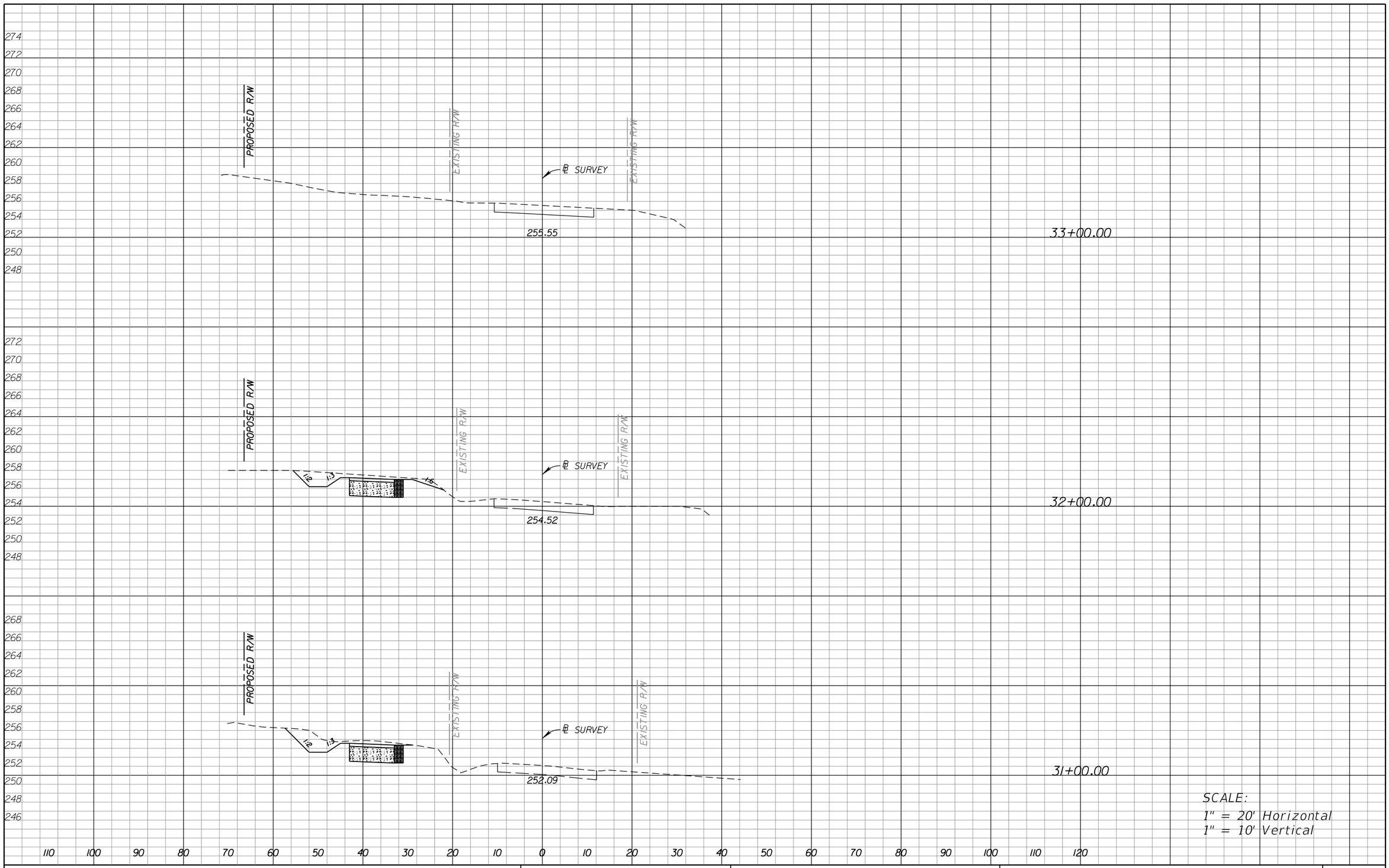

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DATE	DESCRIPTION	DATE	DESCRIPTION

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CROSS SECTIONS

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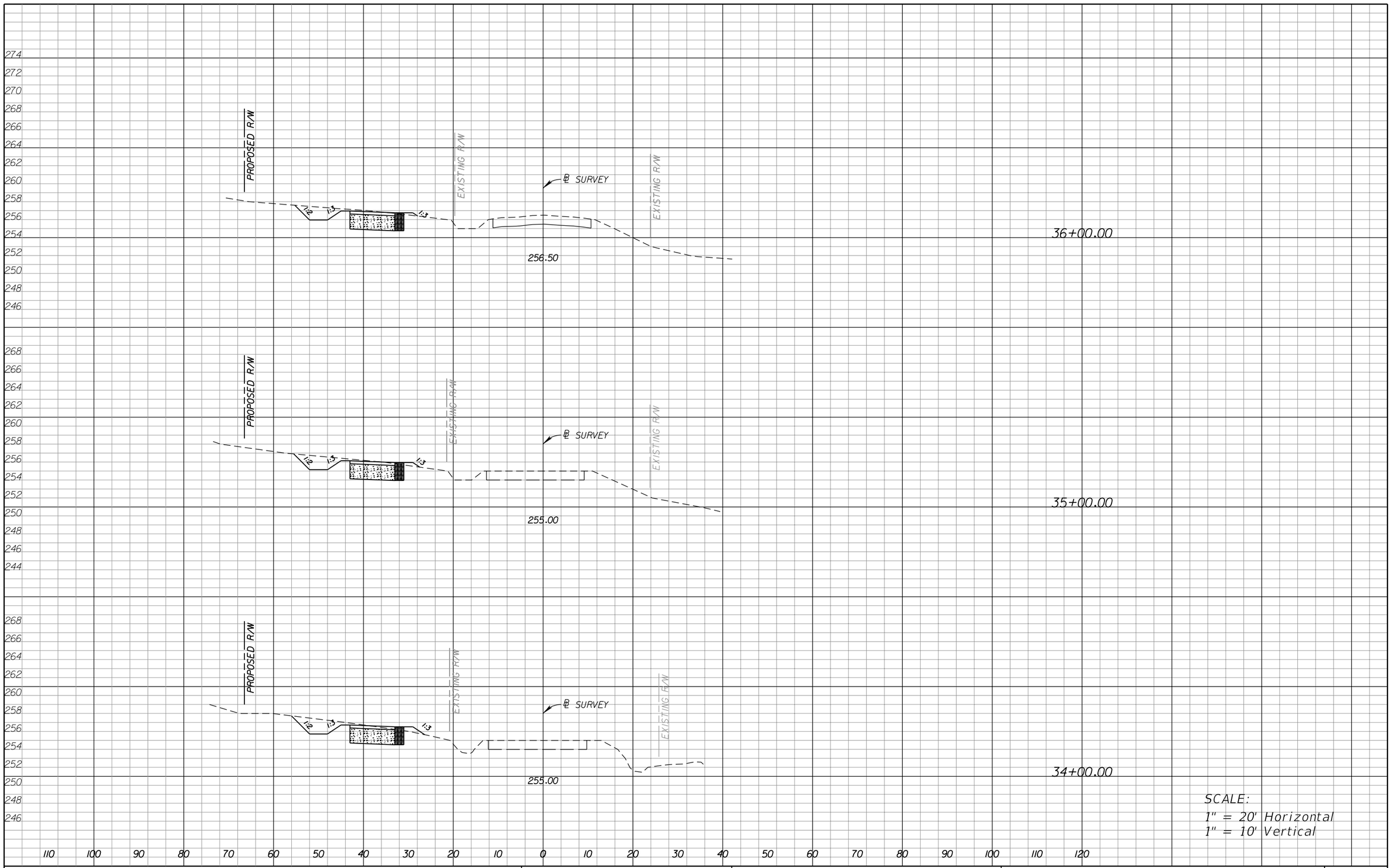

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DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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CROSS SECTIONS

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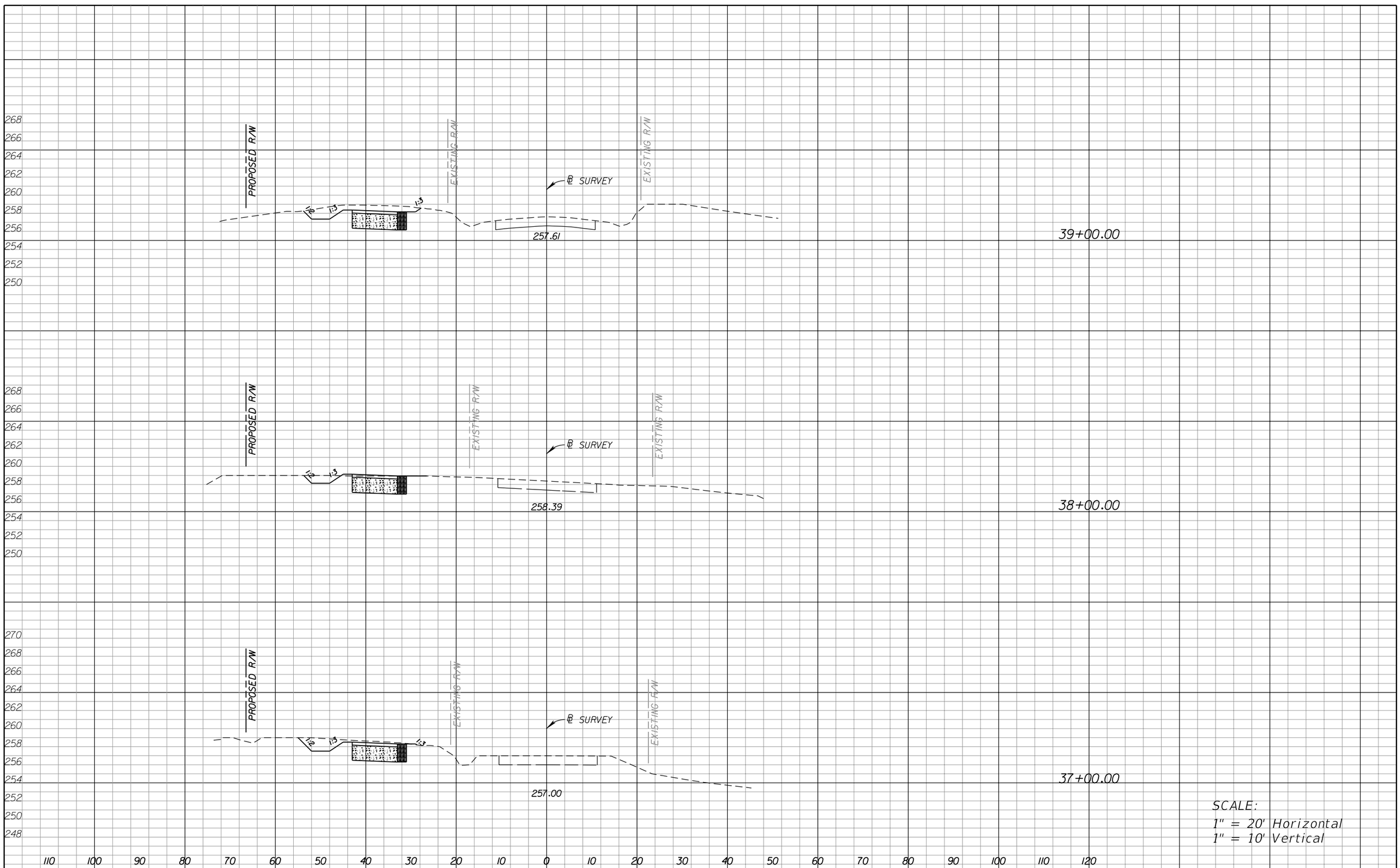

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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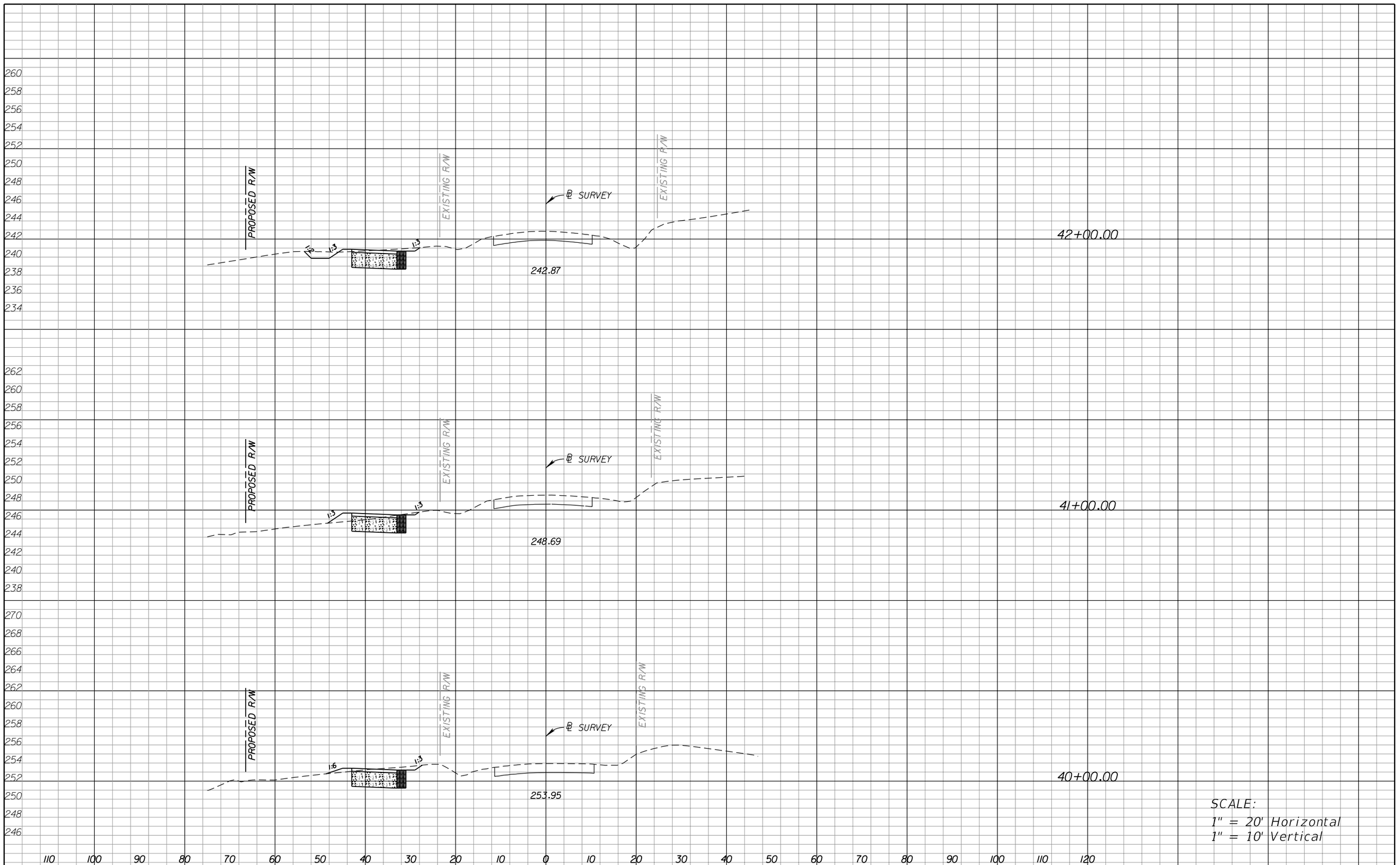

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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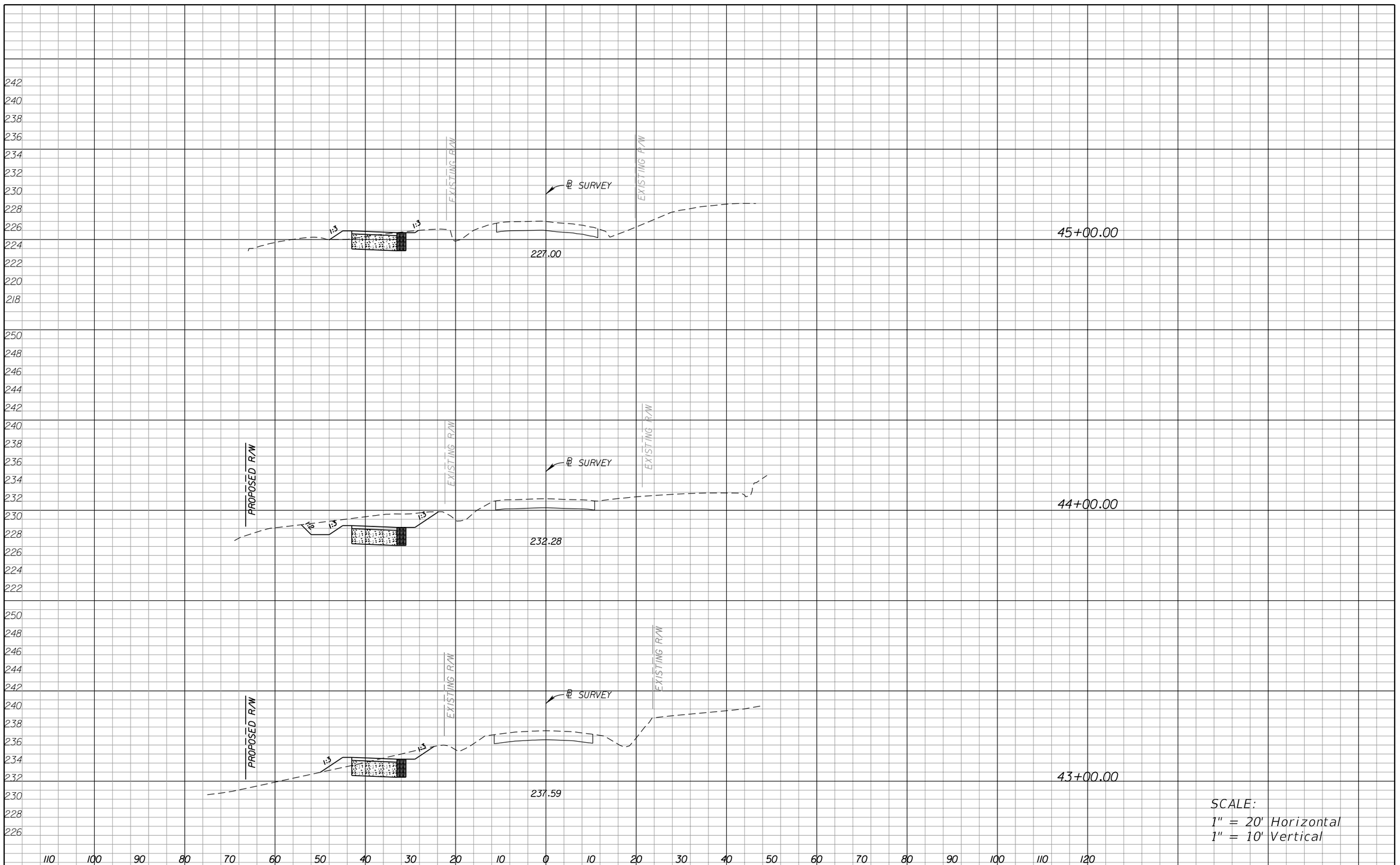

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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CROSS SECTIONS

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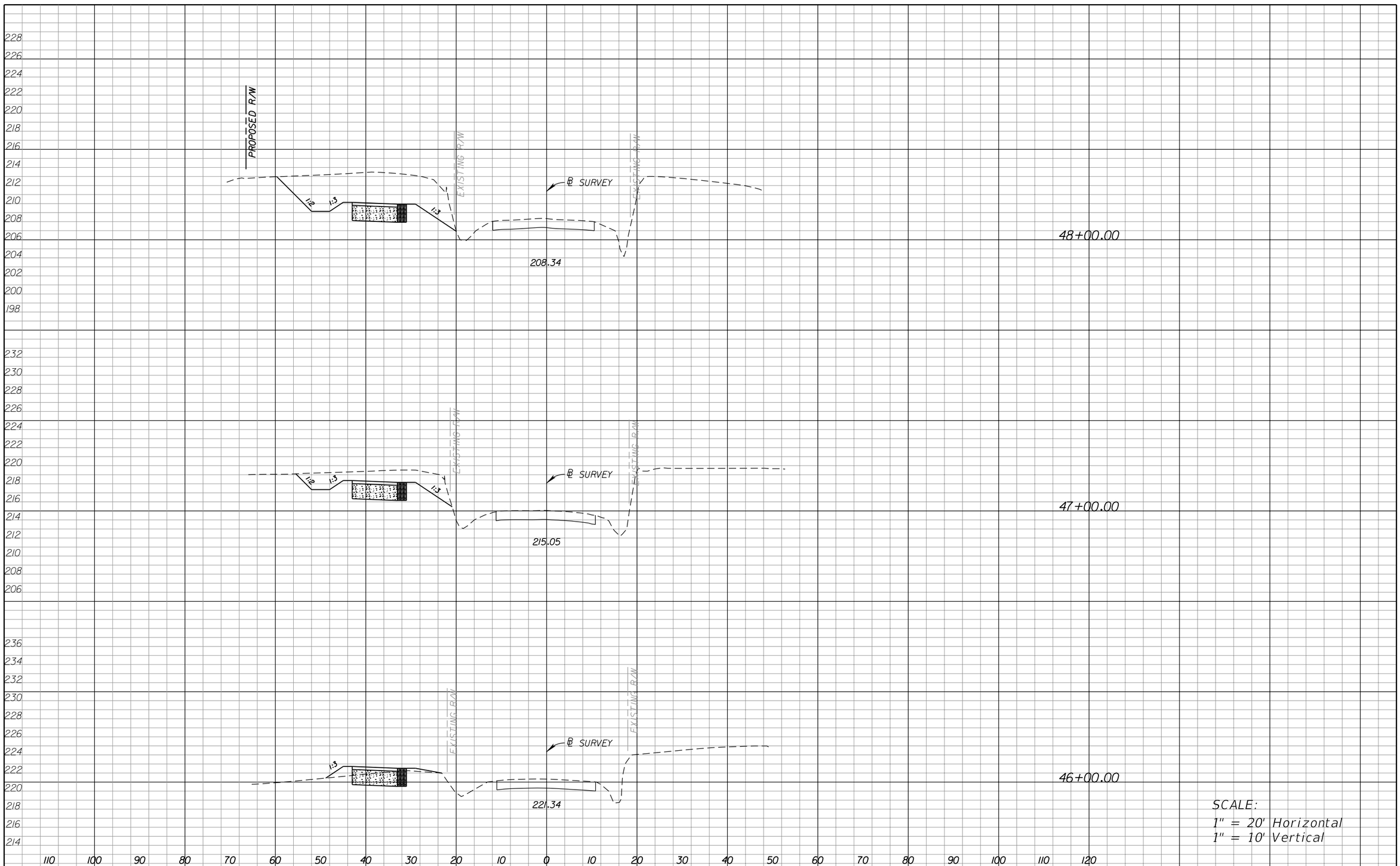

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

SHEET NO. 62

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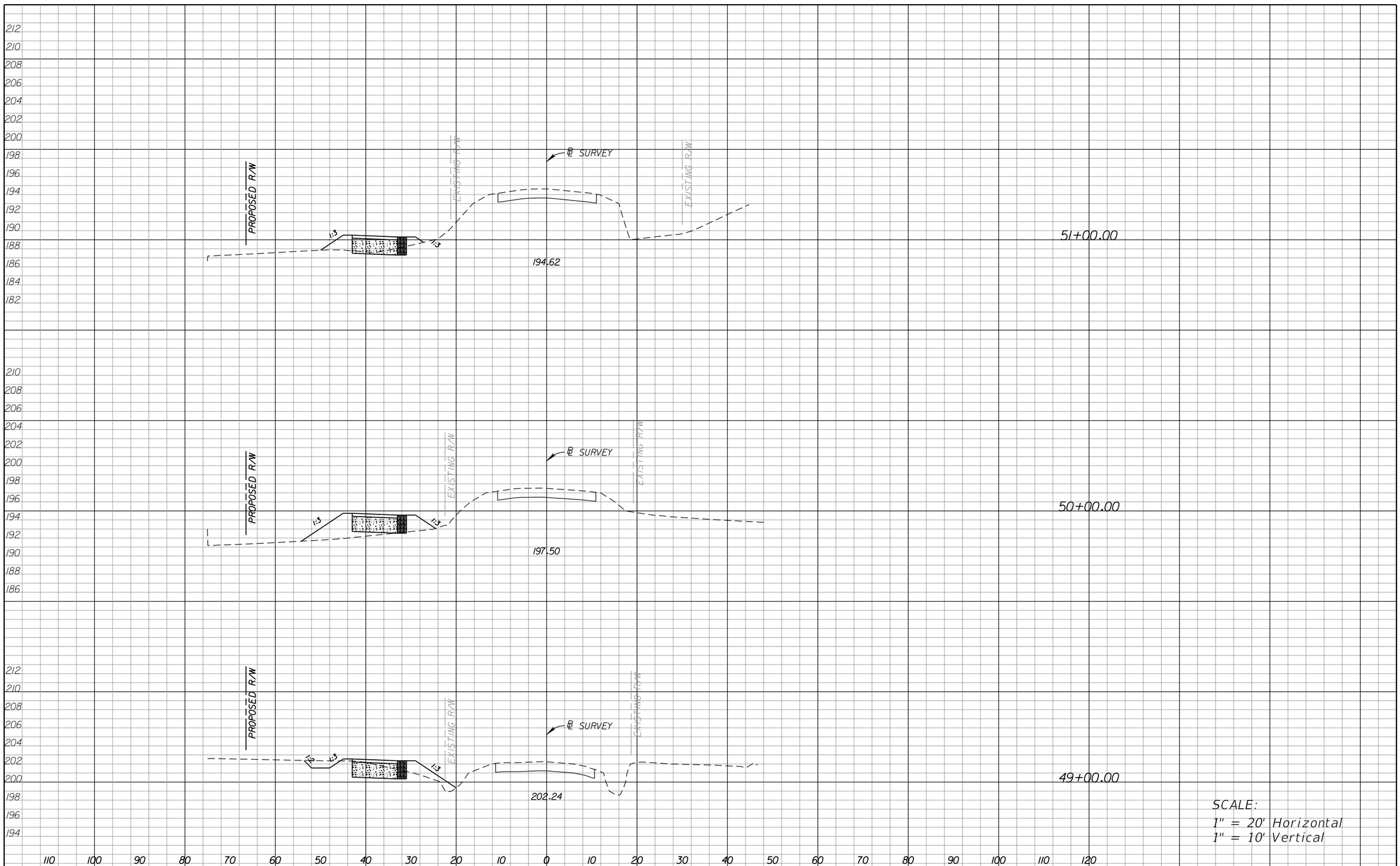

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DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
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CROSS SECTIONS

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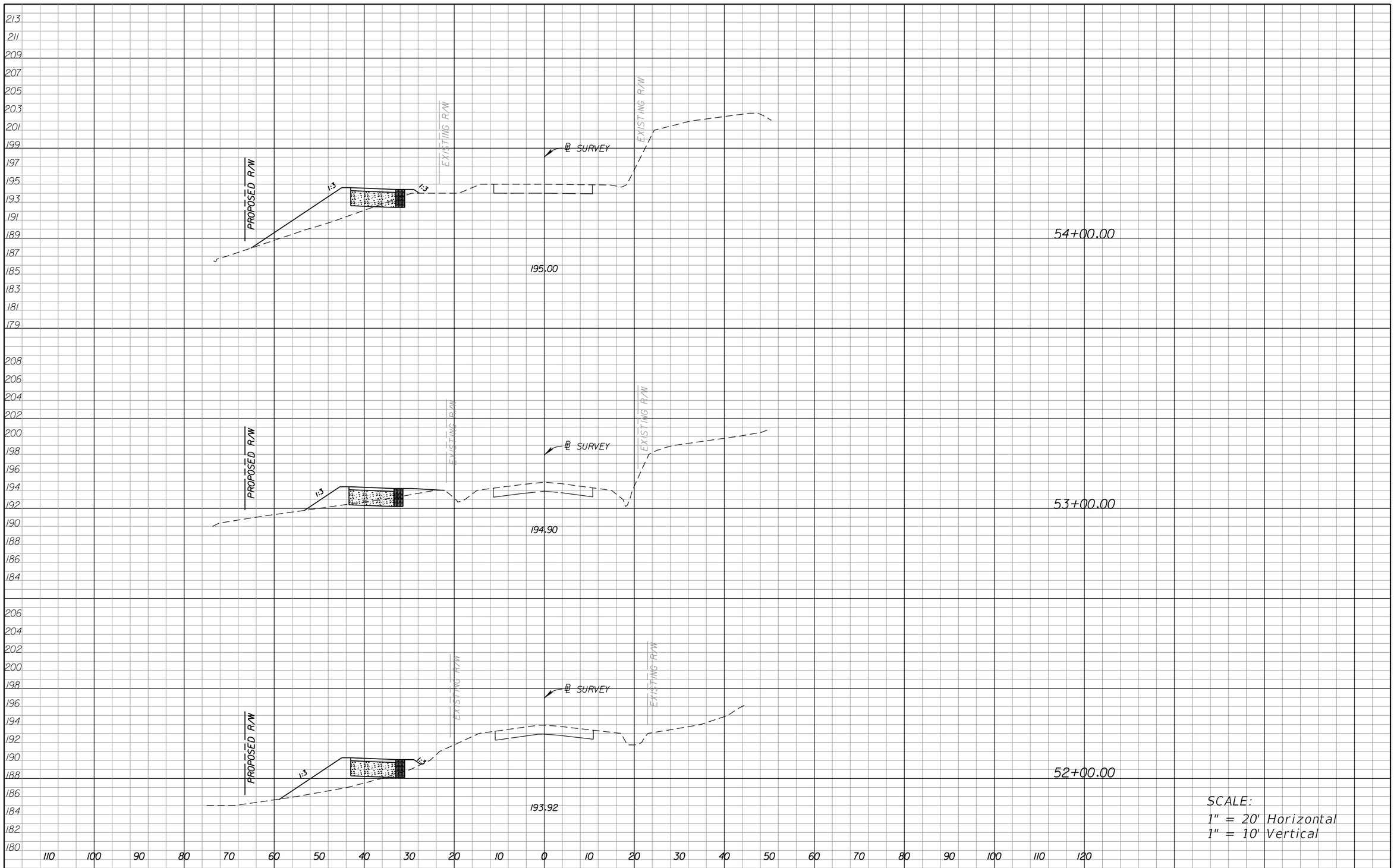


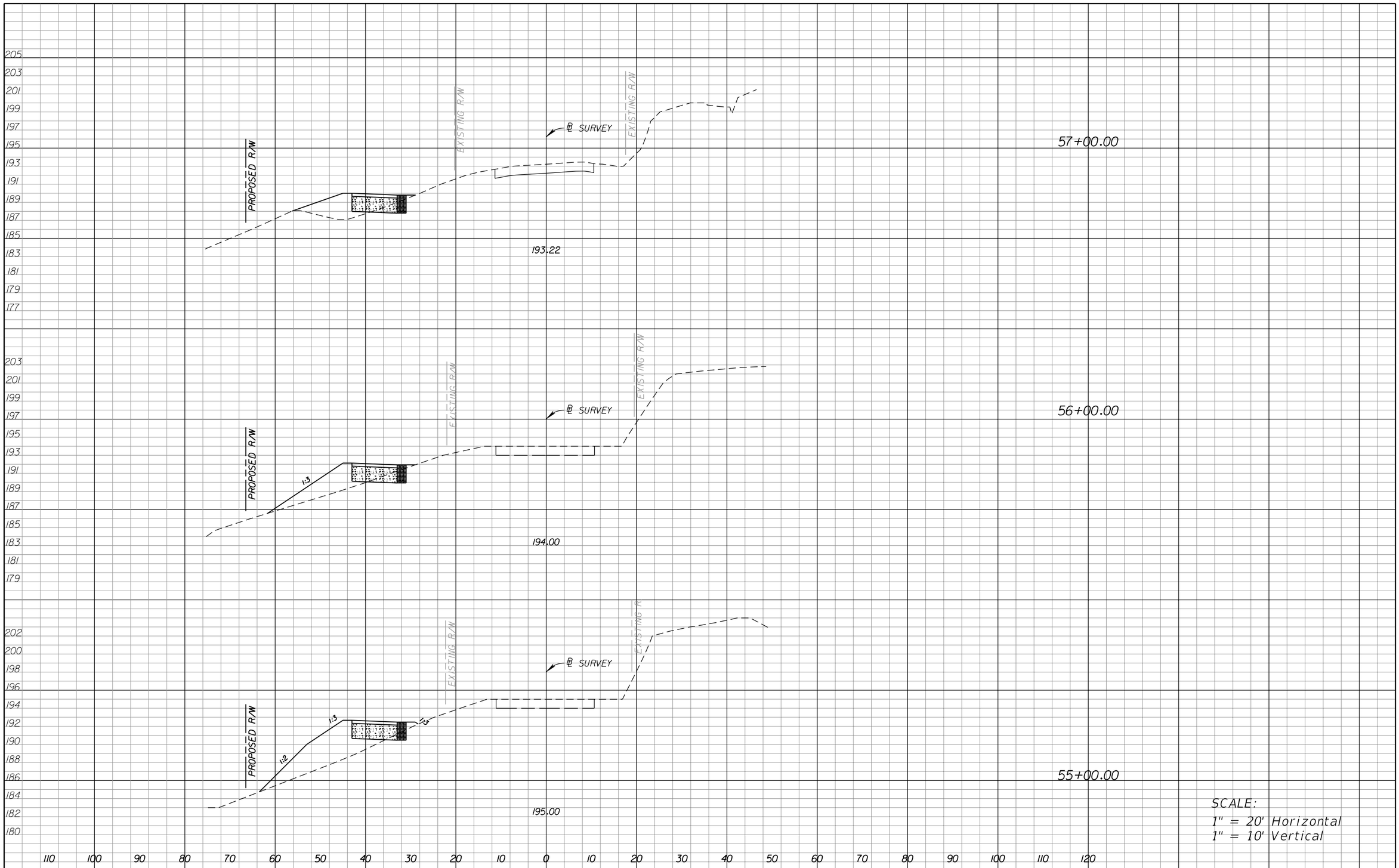
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 64



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 65

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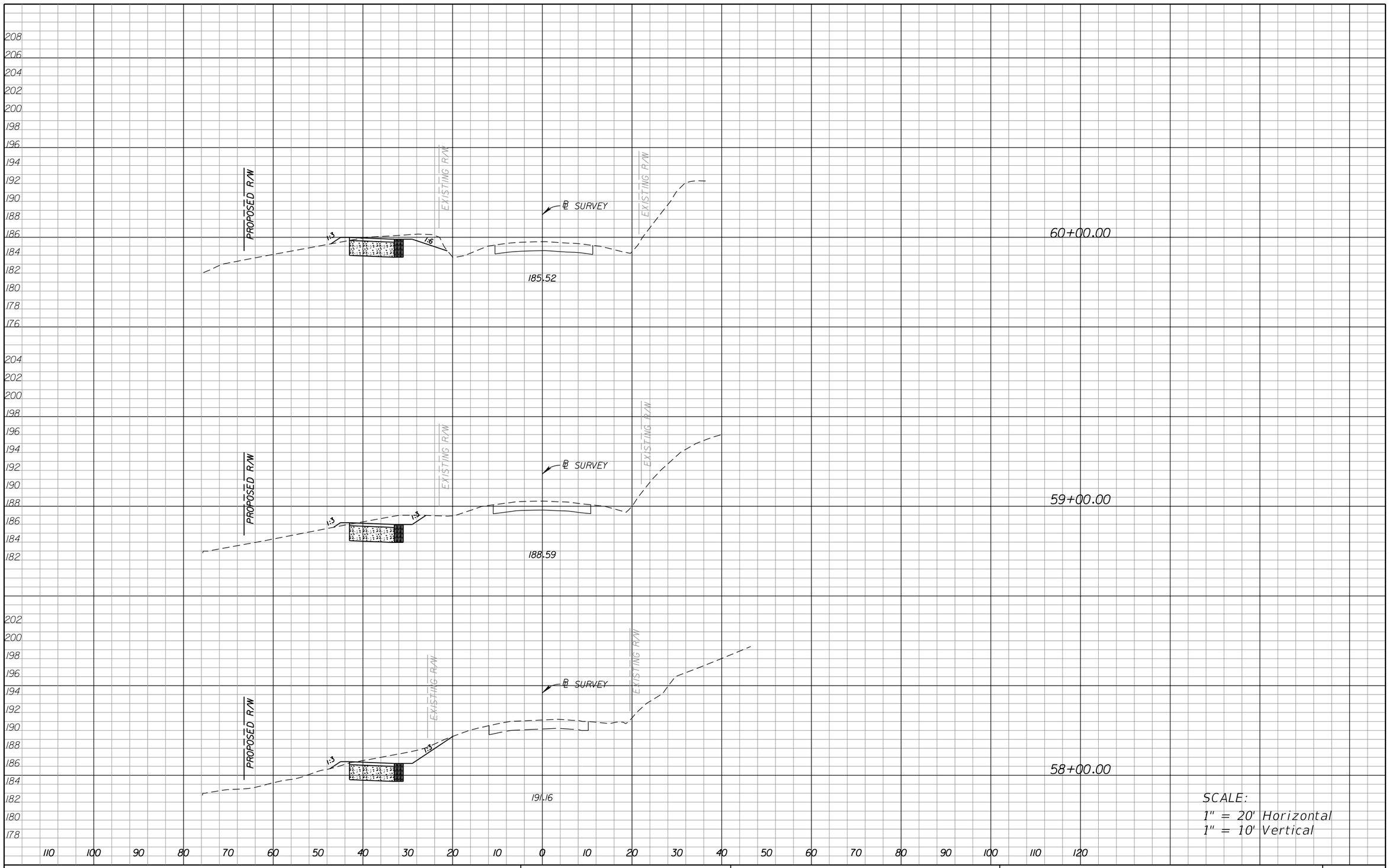


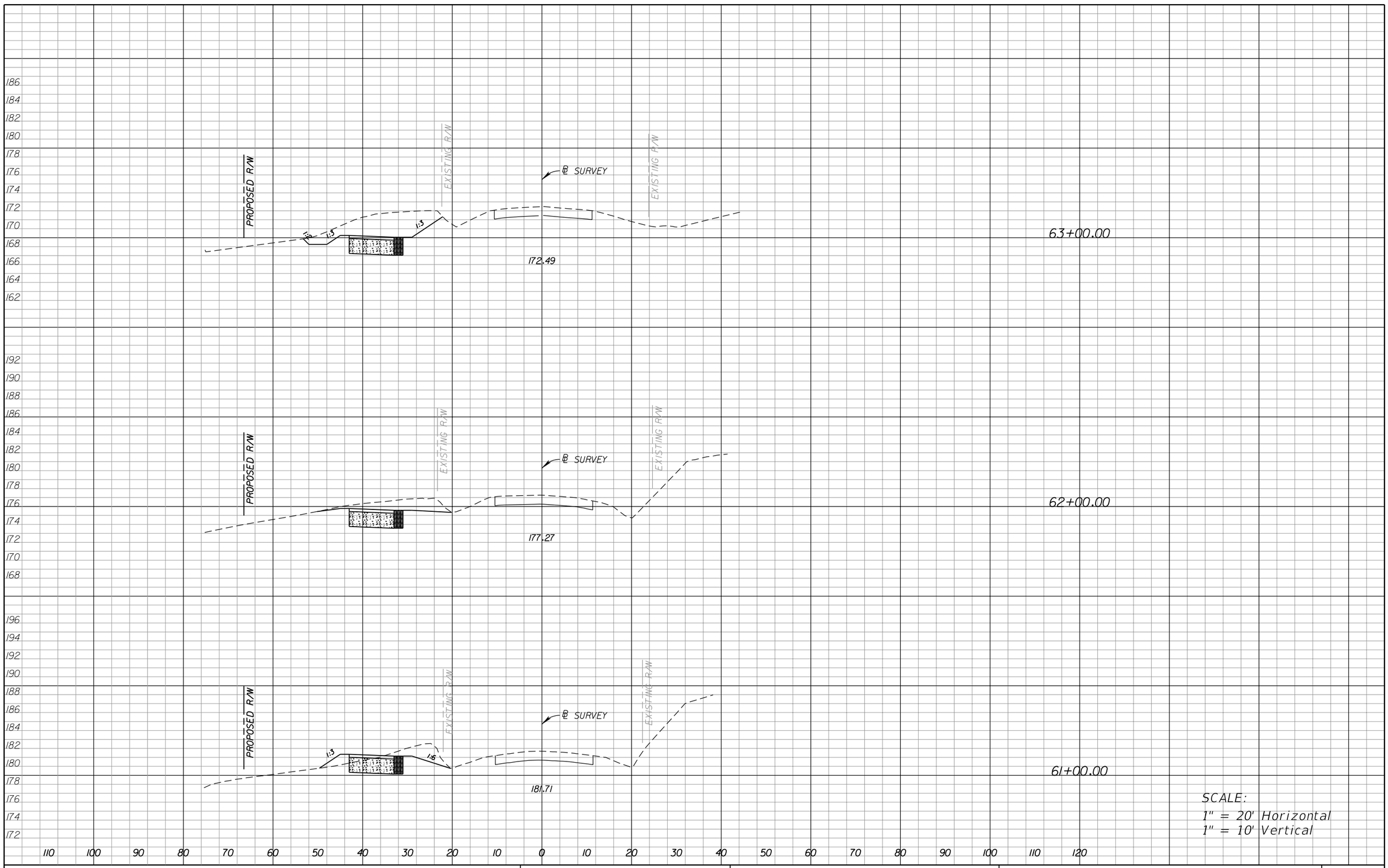
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 66



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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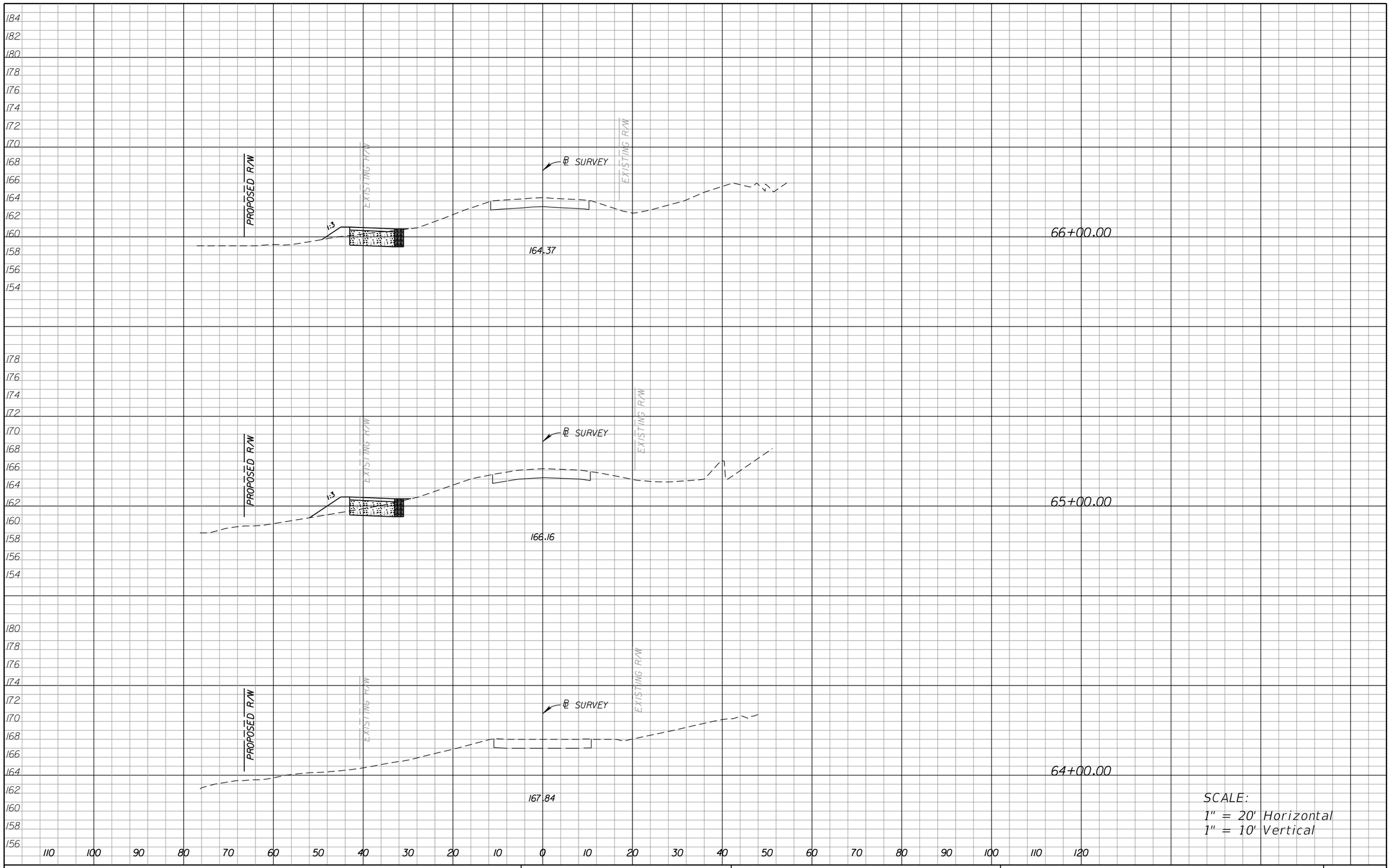
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 67



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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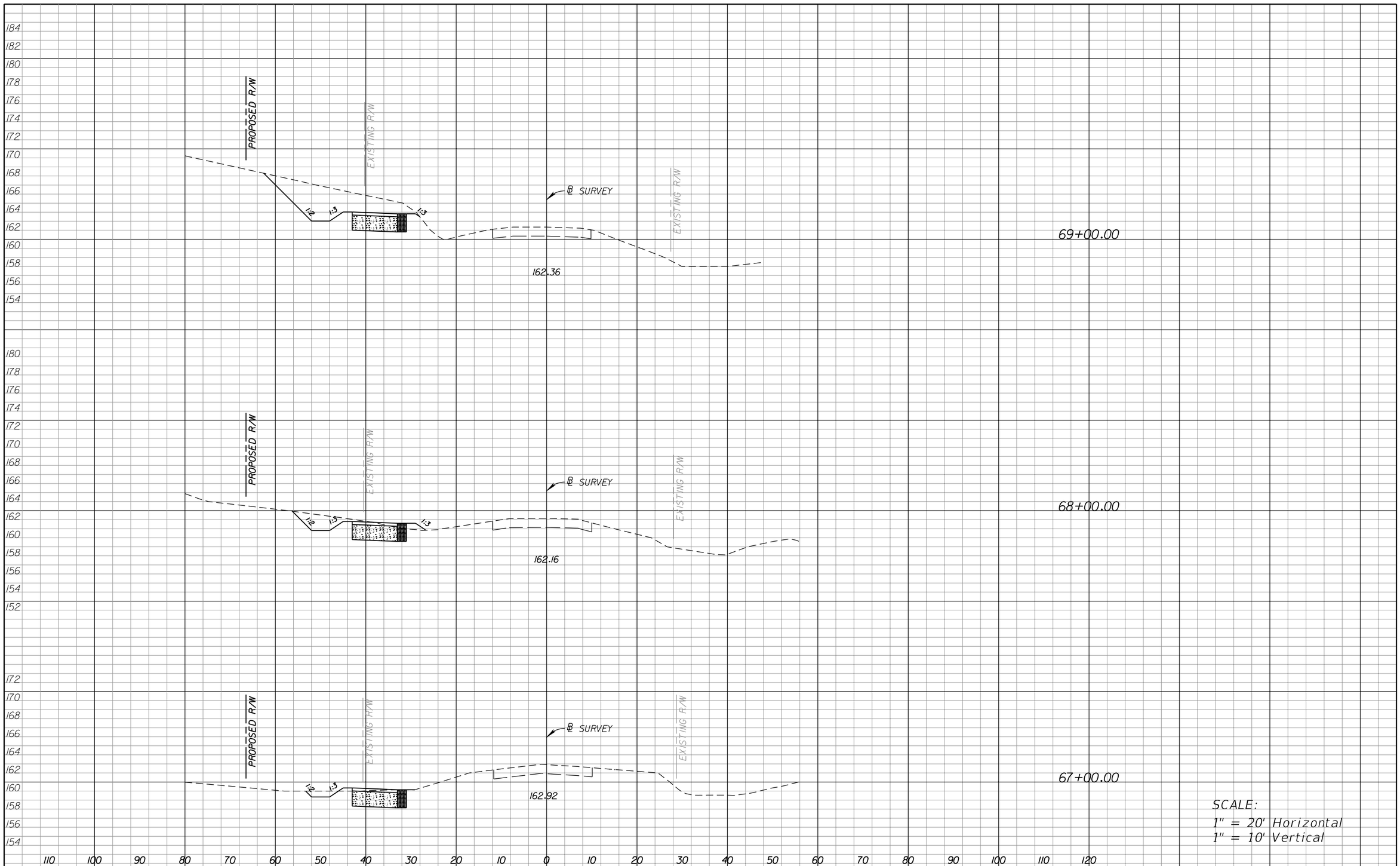

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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SHEET NO. 69

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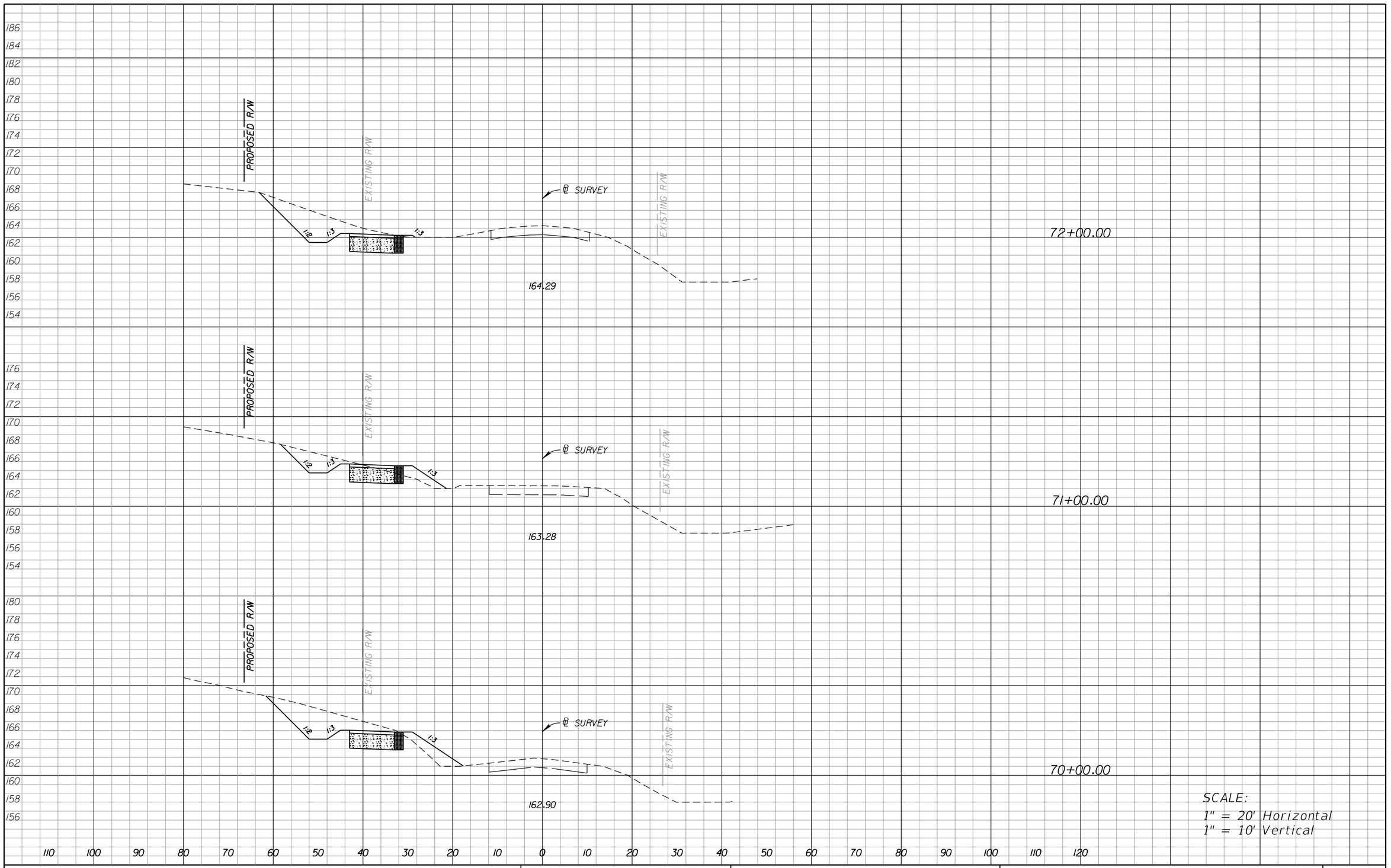

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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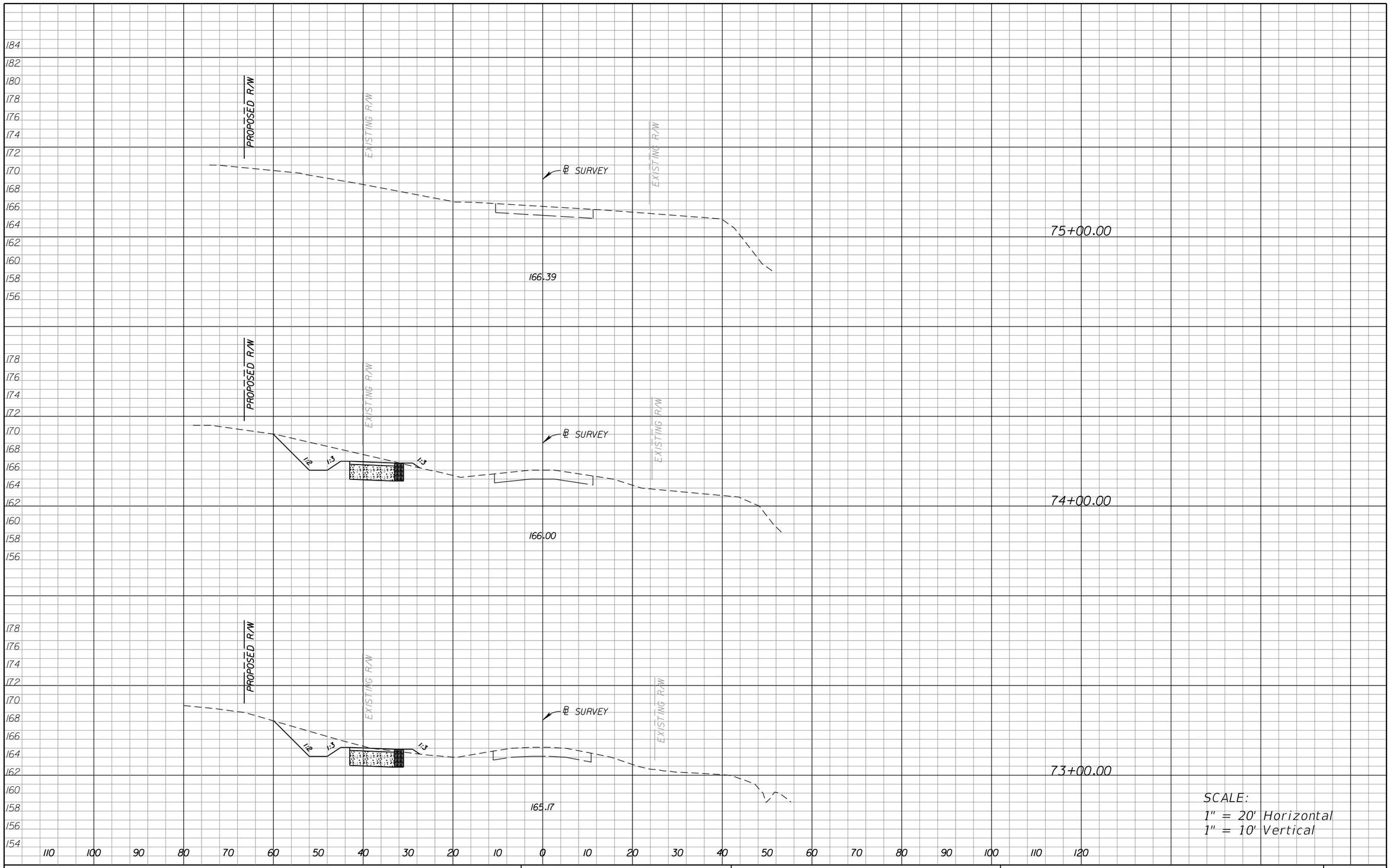

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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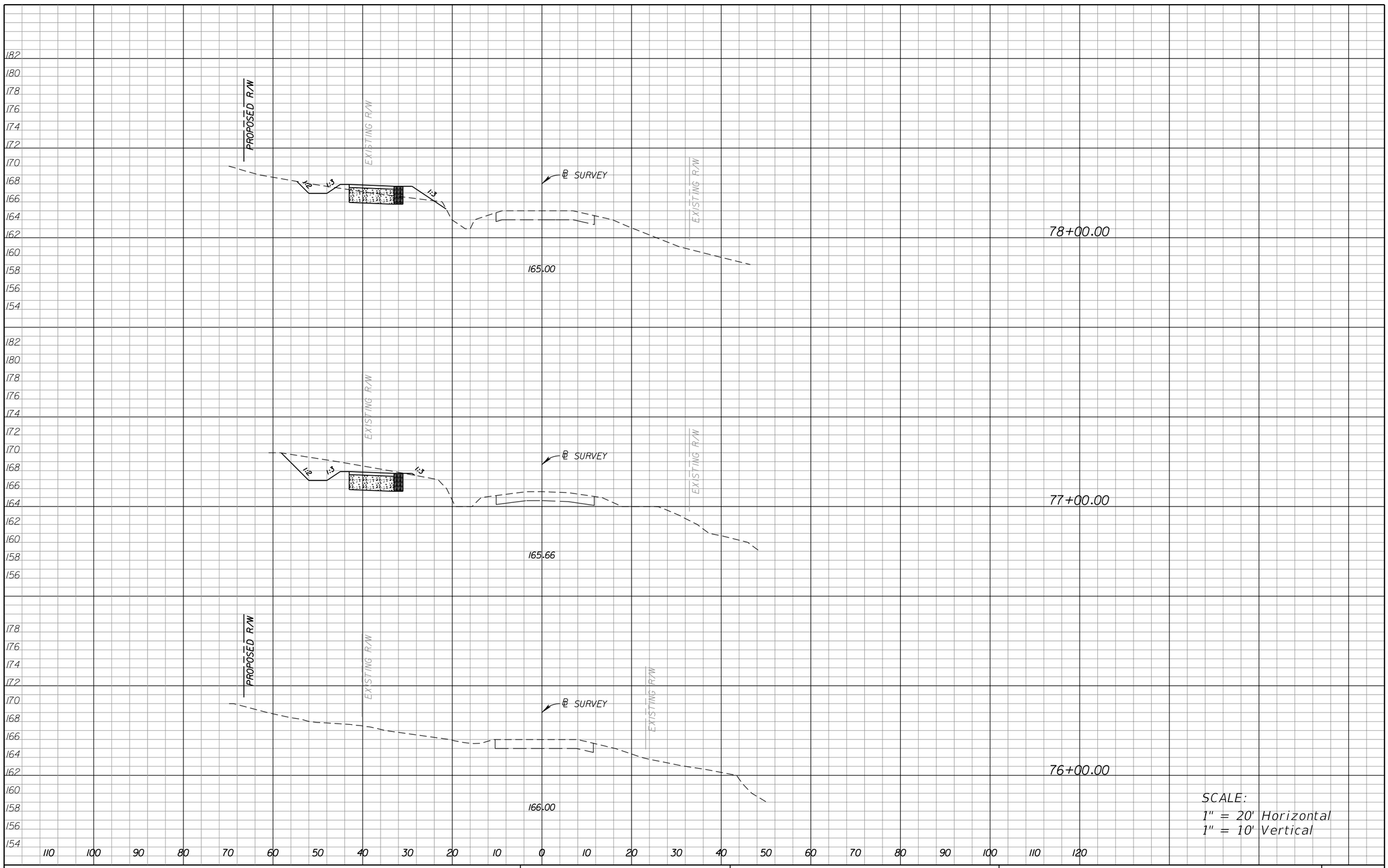
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 71



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

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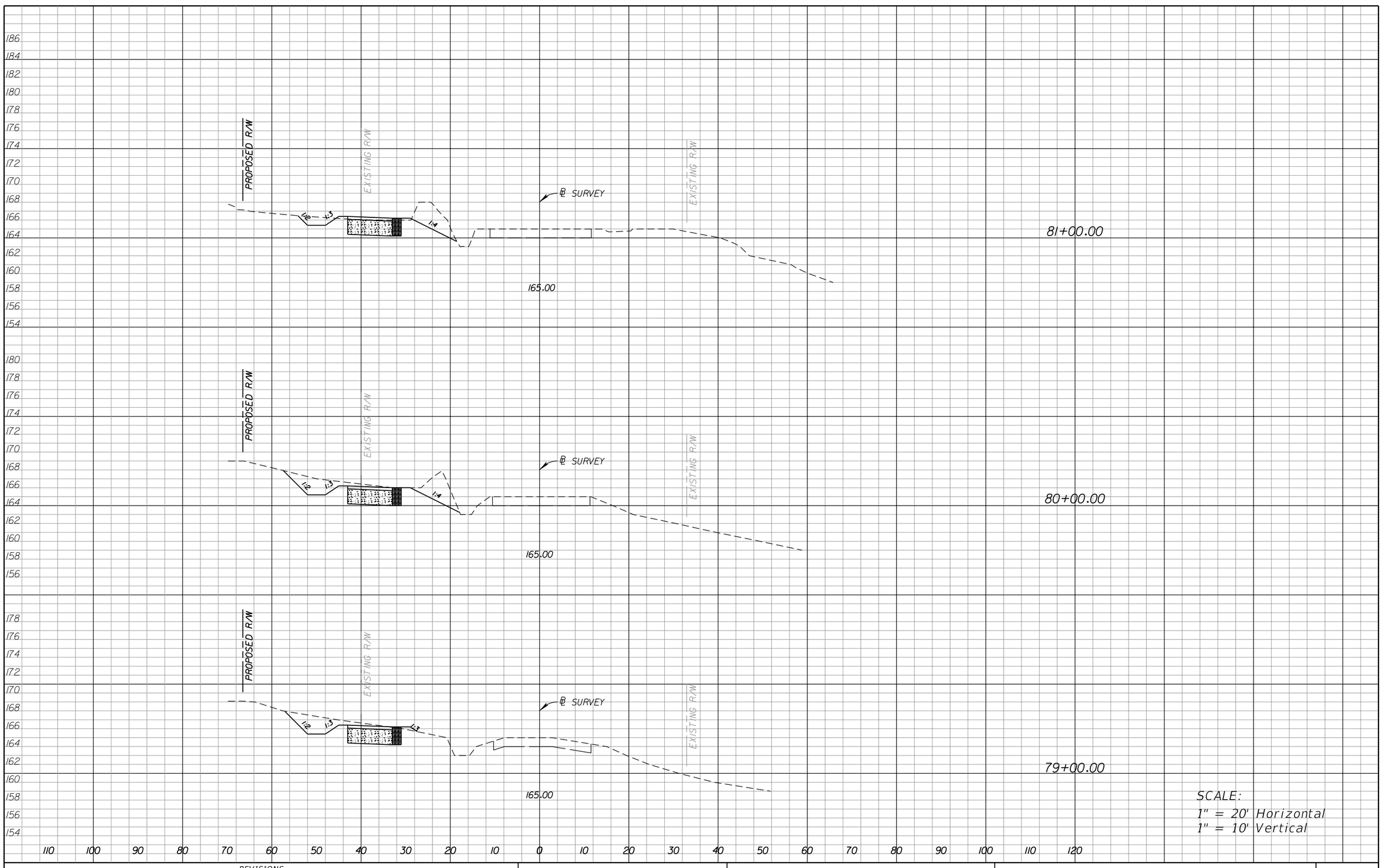

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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CROSS SECTIONS

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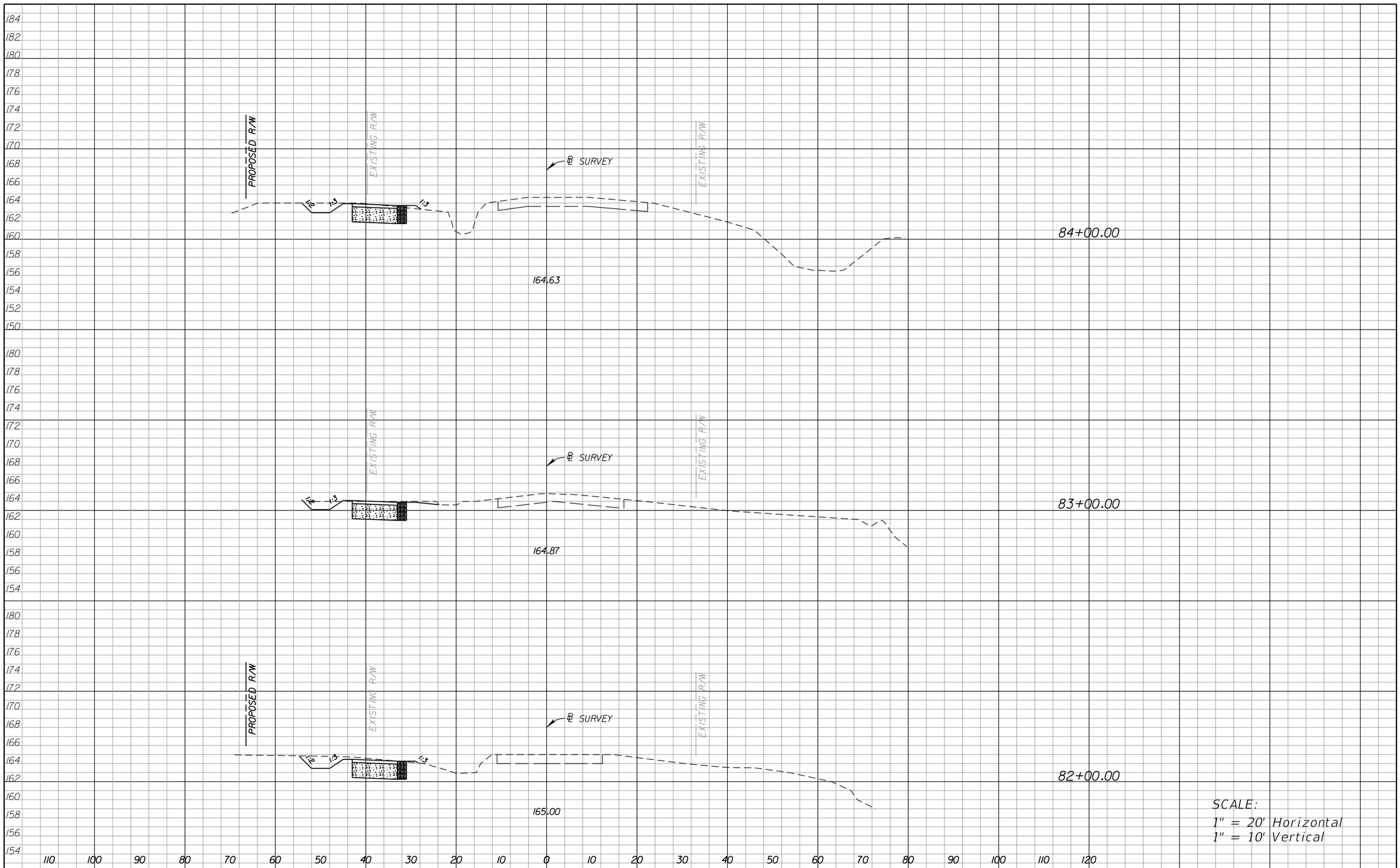

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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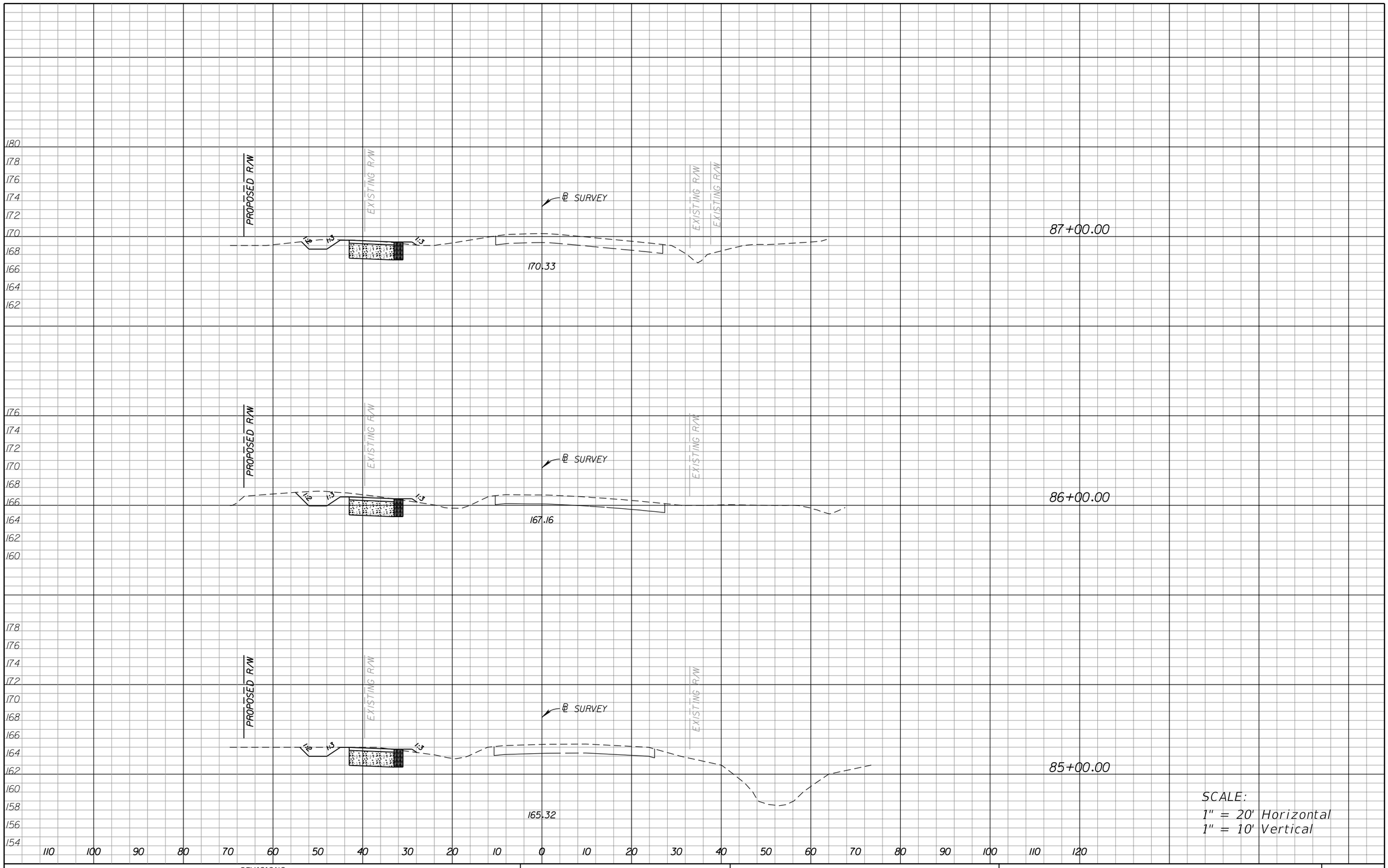

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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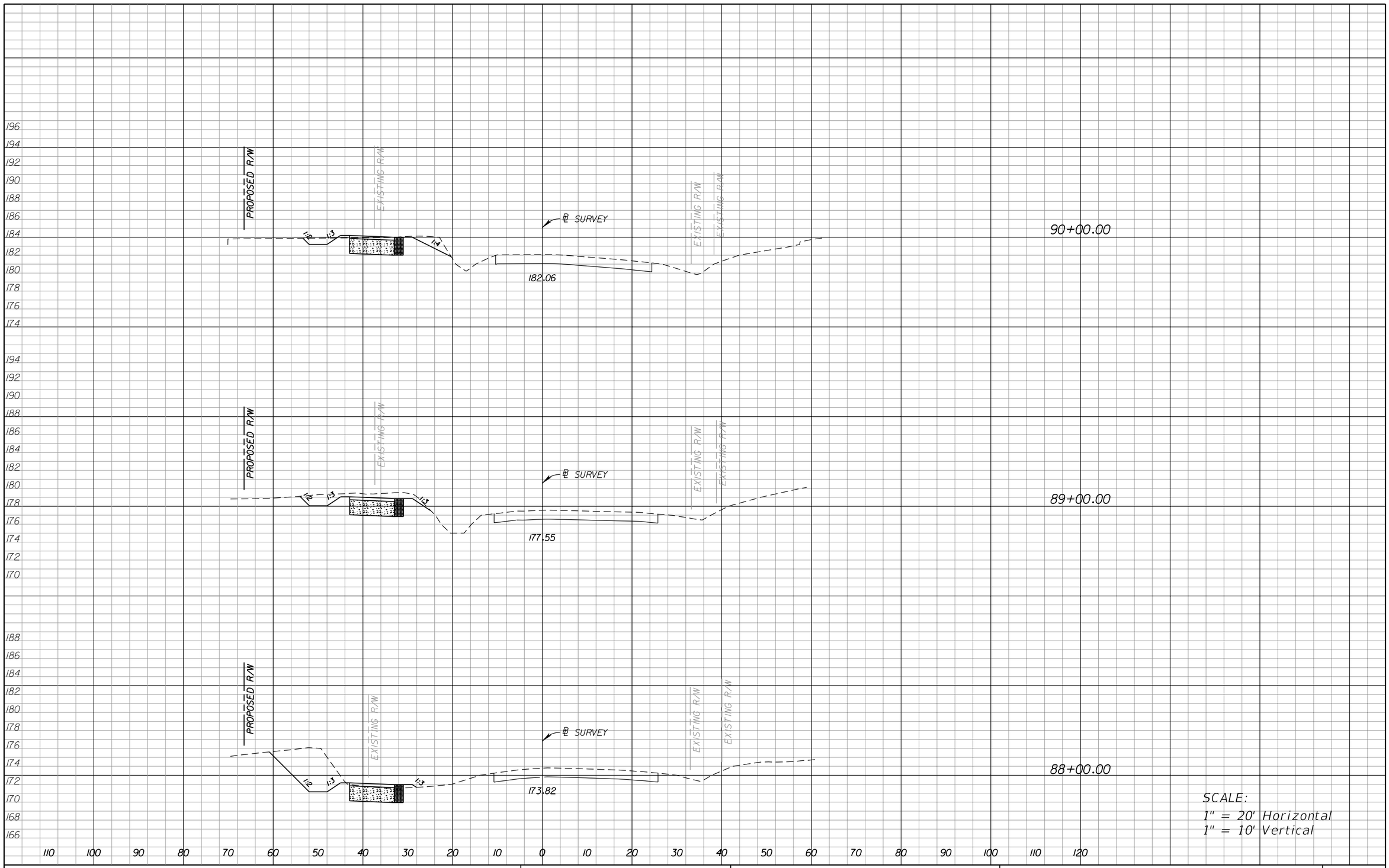
CROSS SECTIONS

SHEET NO. 75



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

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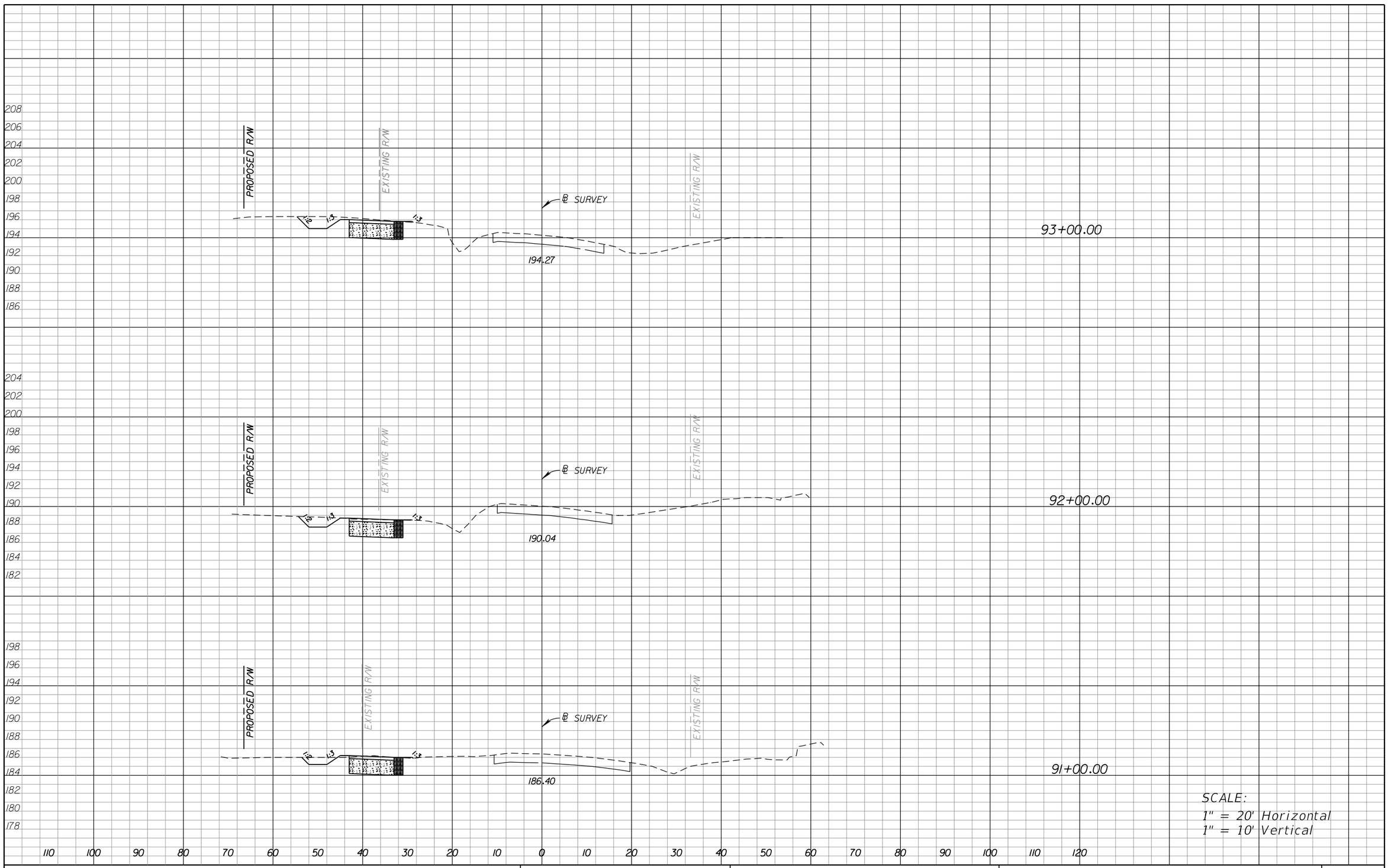

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

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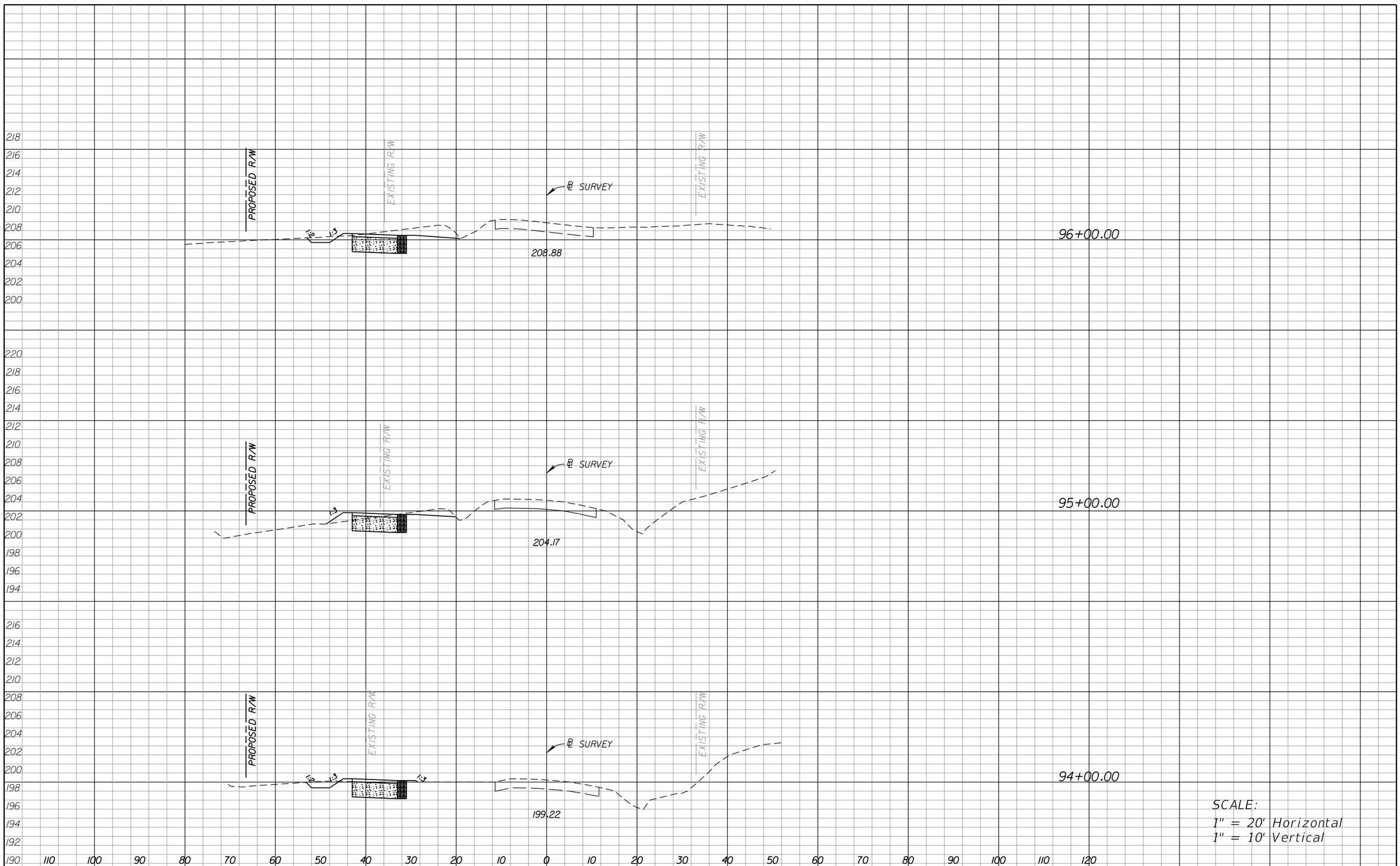

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 78

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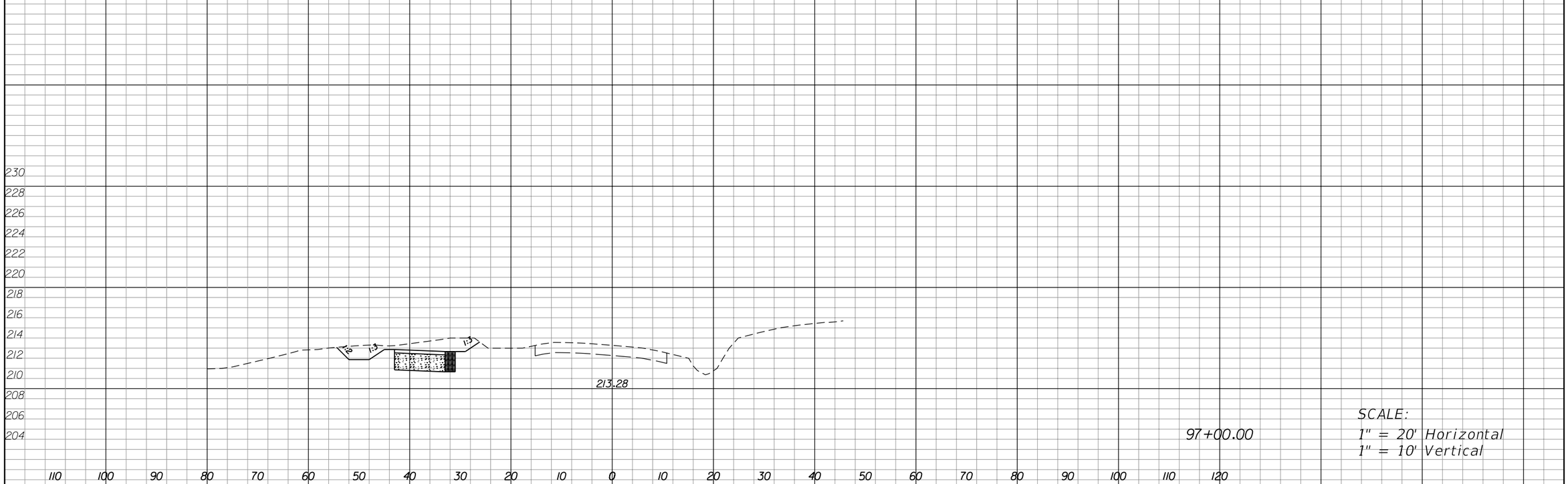

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SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

REGISTE, SLIGER ENGINEERING, INC.
1427 N. BRONOUGH ST., TALLAHASSEE, FL 32303 PHONE: (850) 894-4521
CERTIFICATE OF AUTHORIZATION NO.: 9292, VENDOR NO. 81-0552915
EOR: Jacques Registe, P.E. No. 43397 JOB NO. 1101

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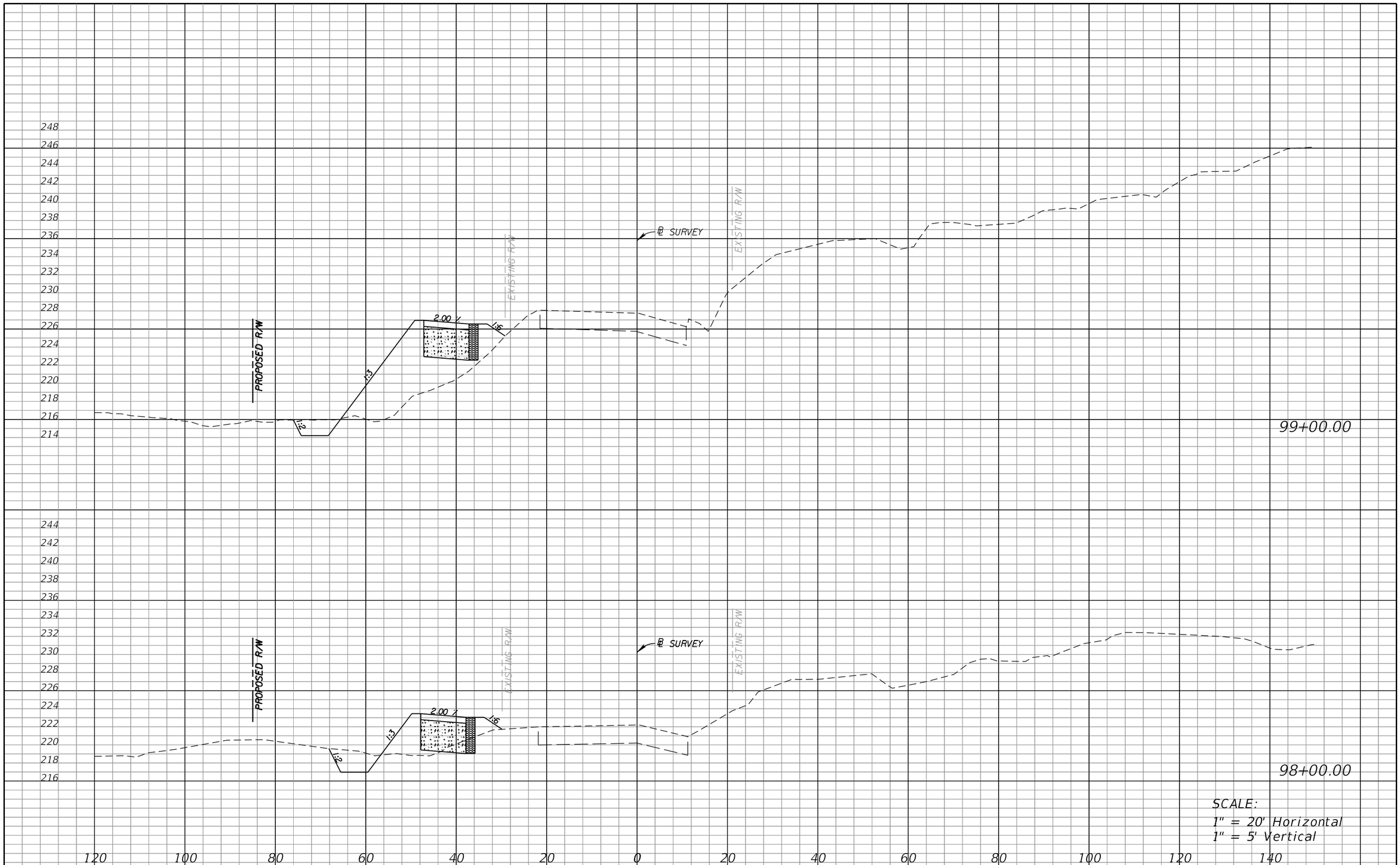
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 79



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

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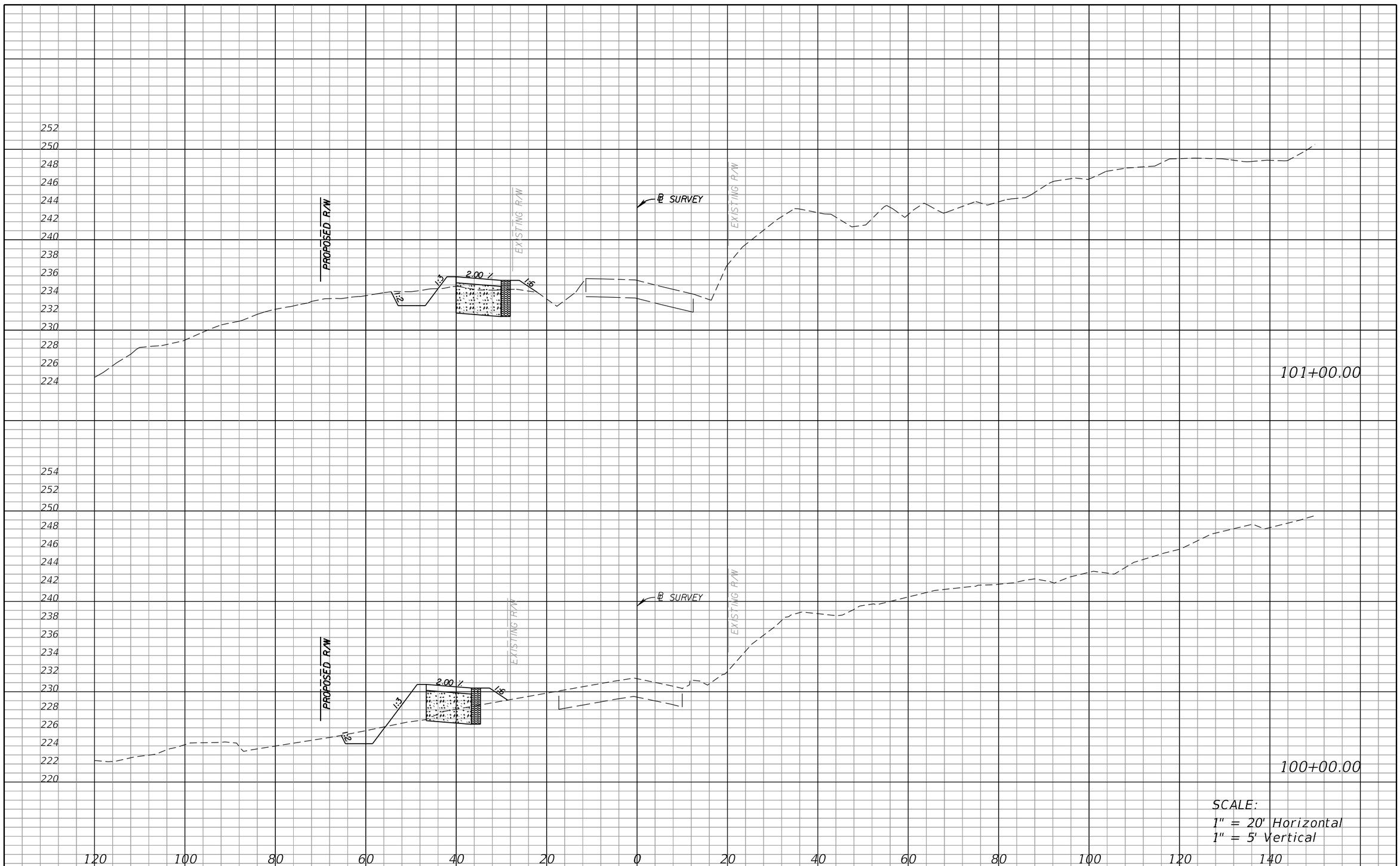

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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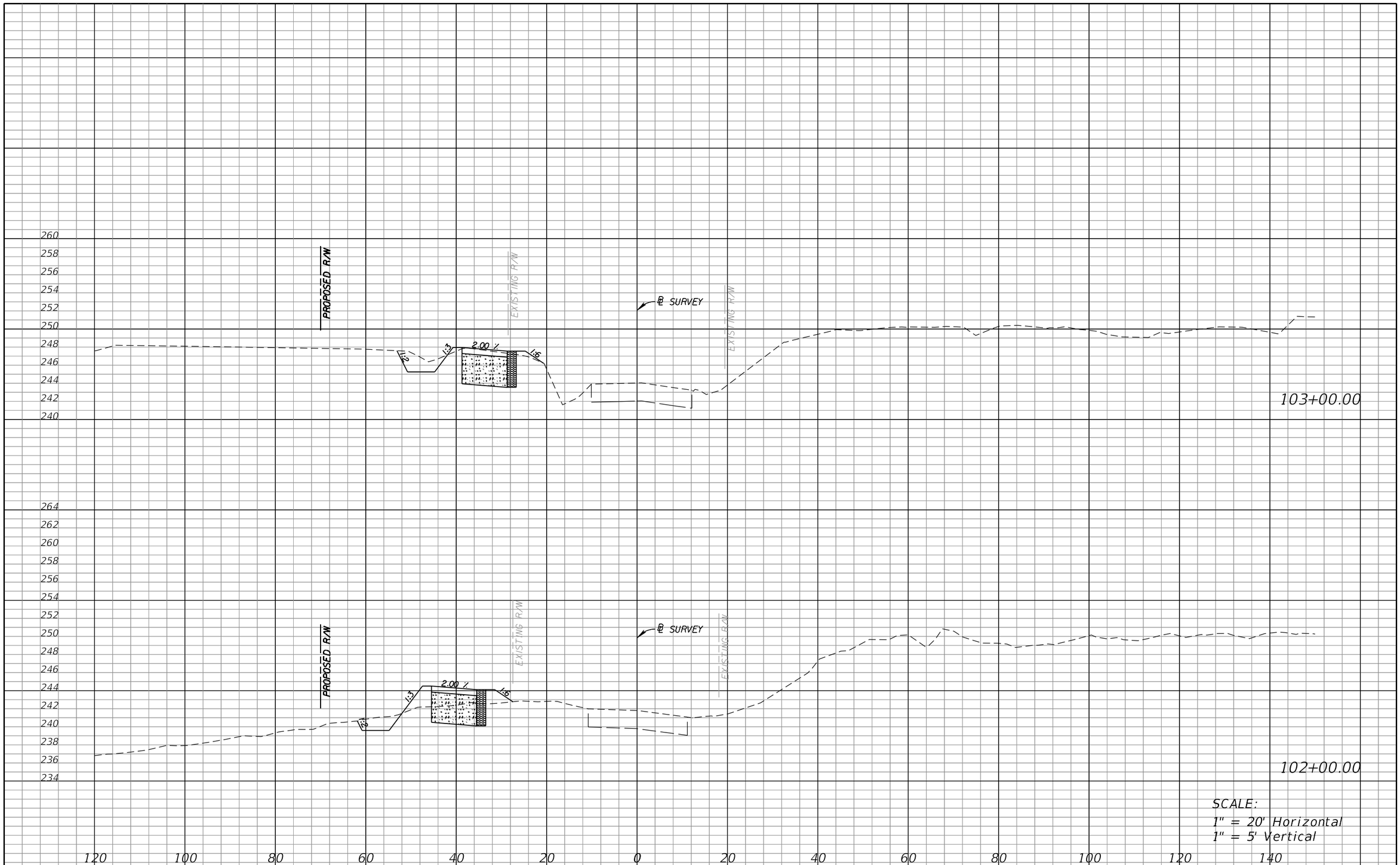

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

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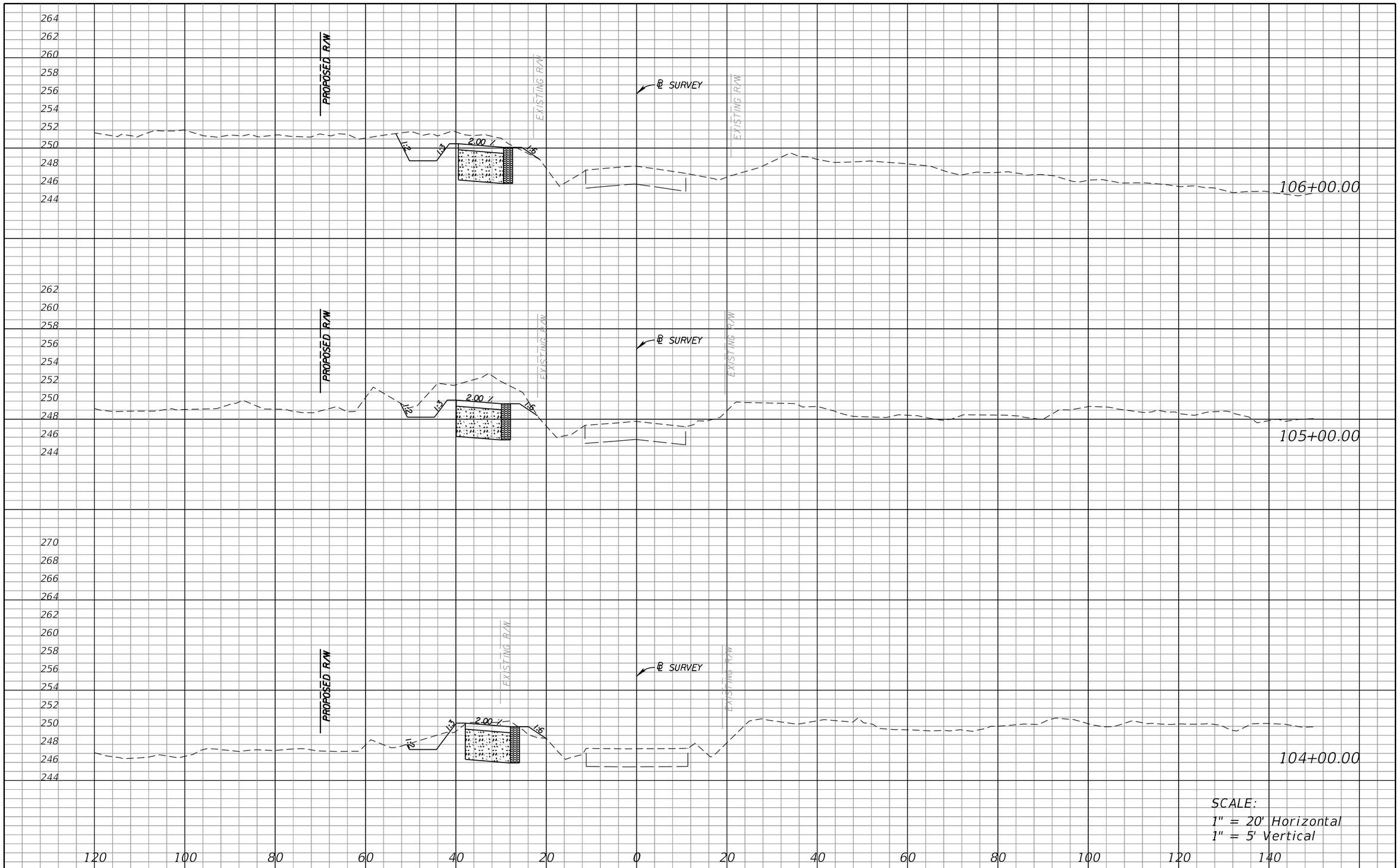

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-2325
813-289-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

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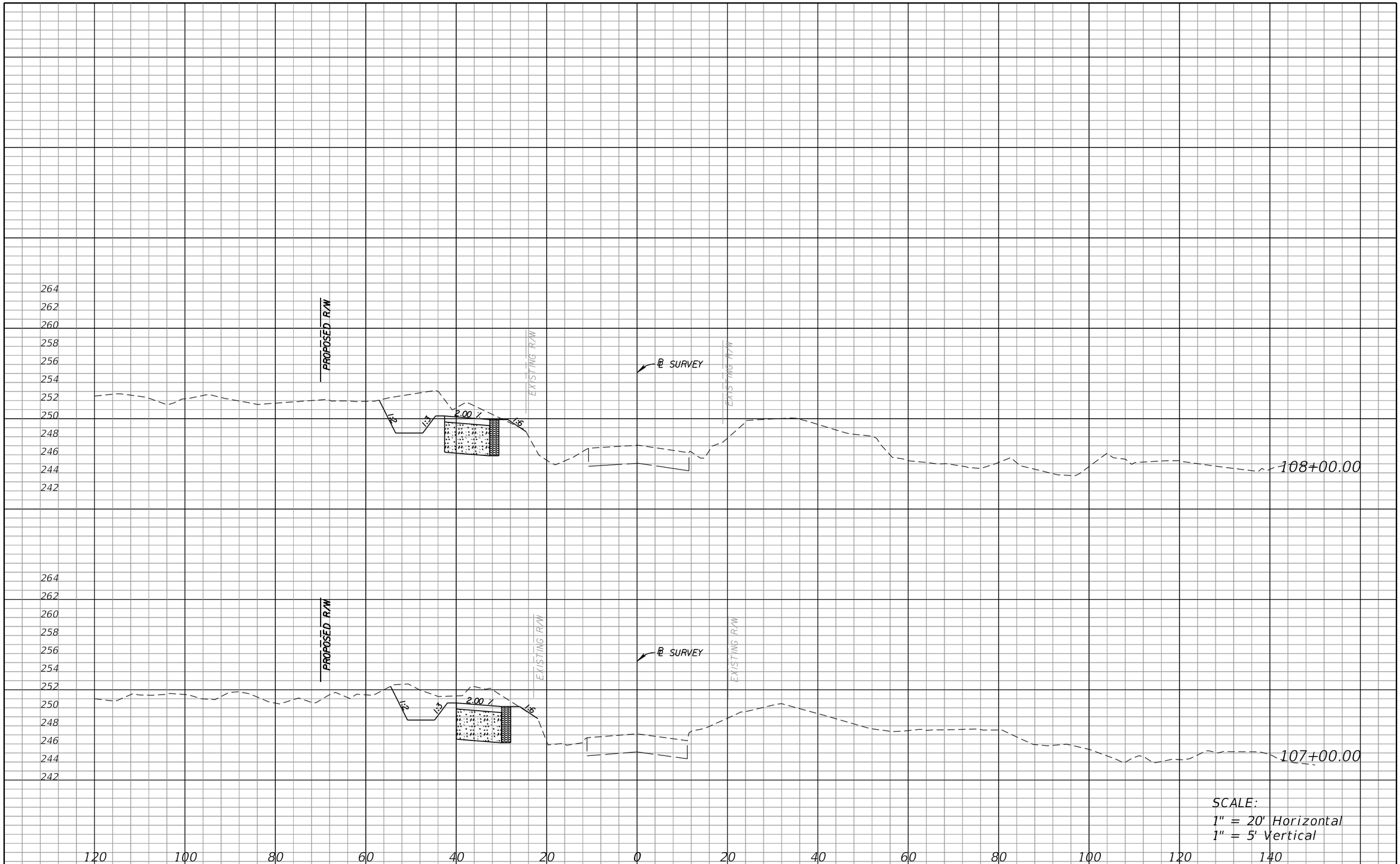

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

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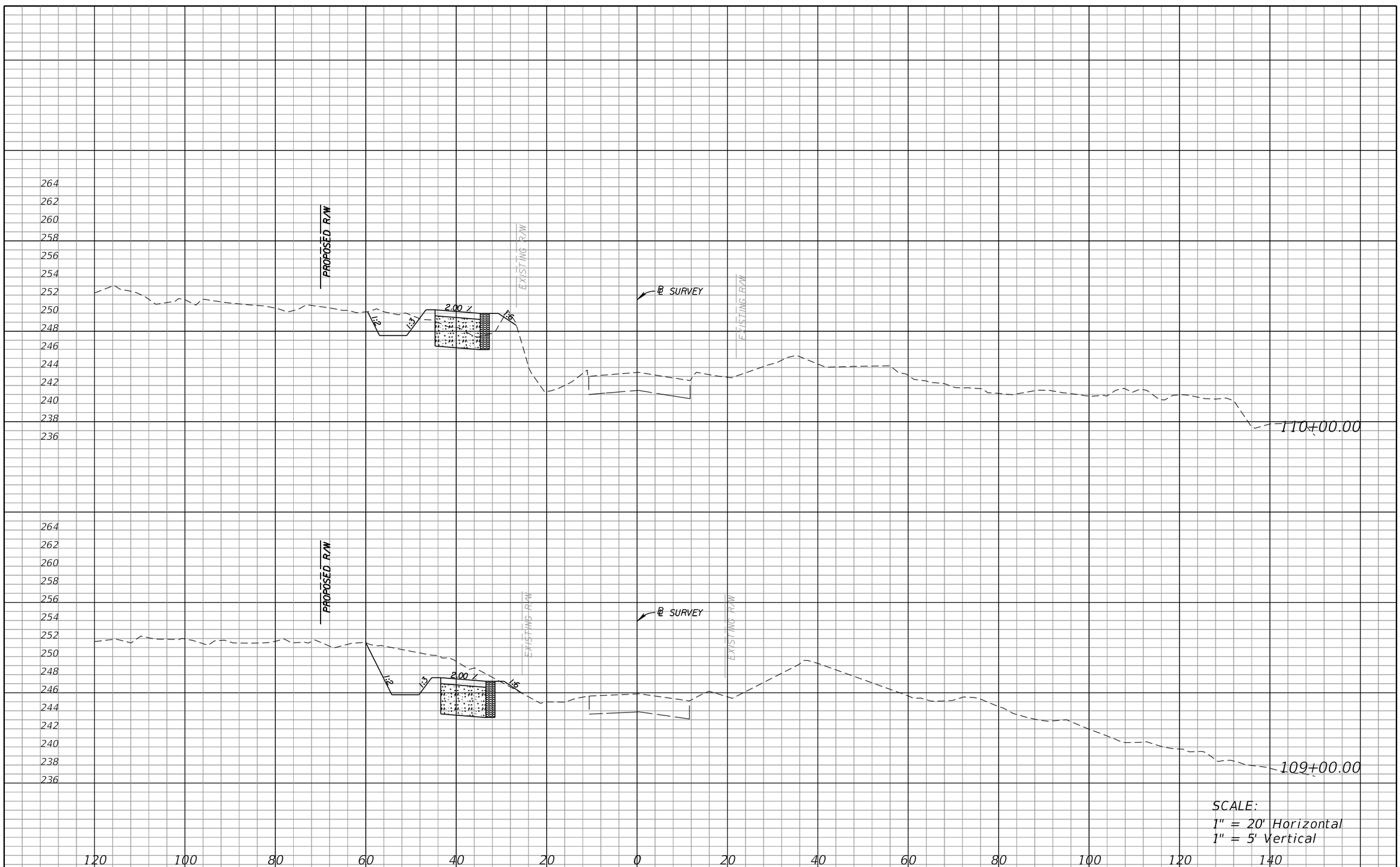

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 85

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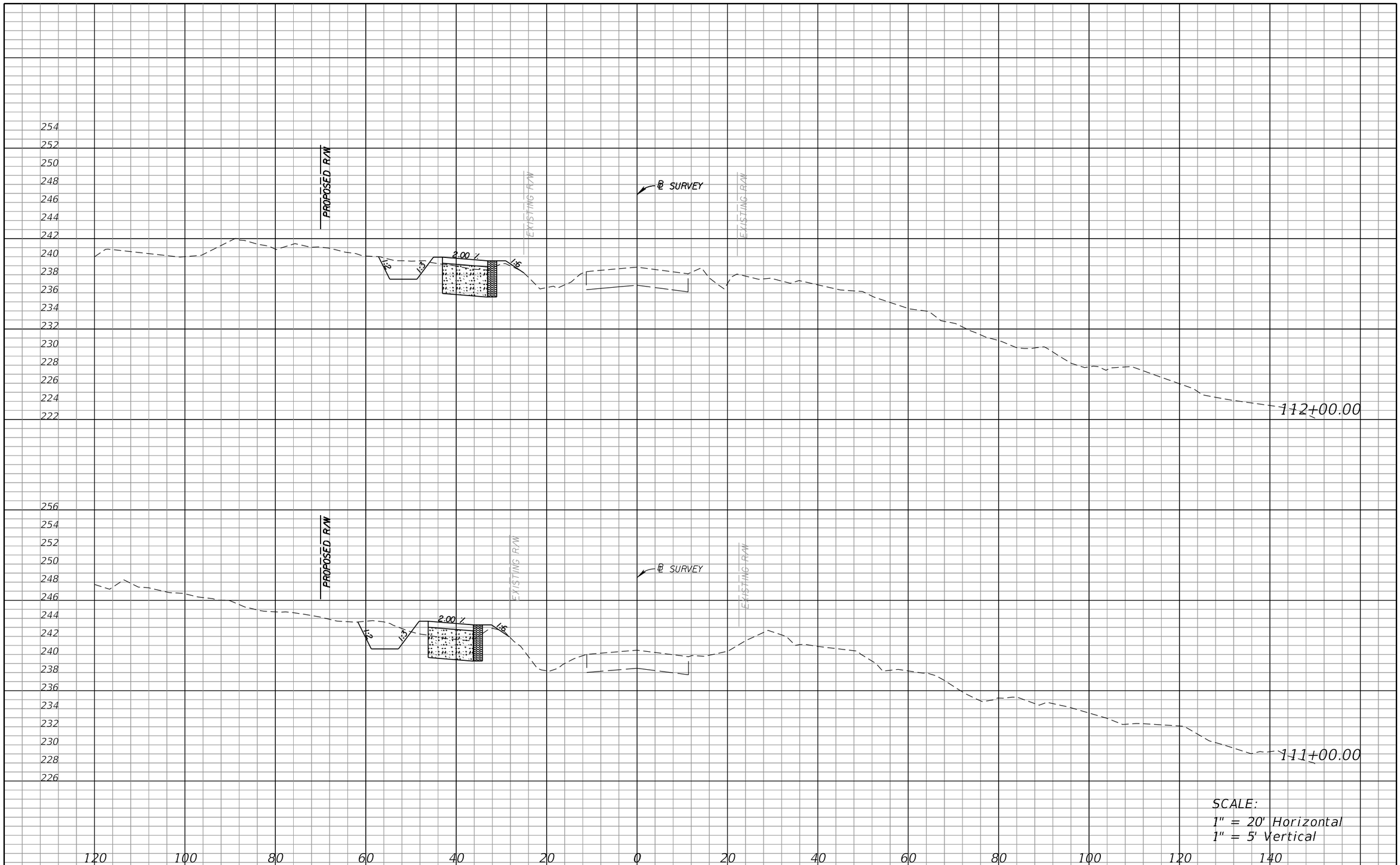

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1752
813-282-2565
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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SHEET NO. 86

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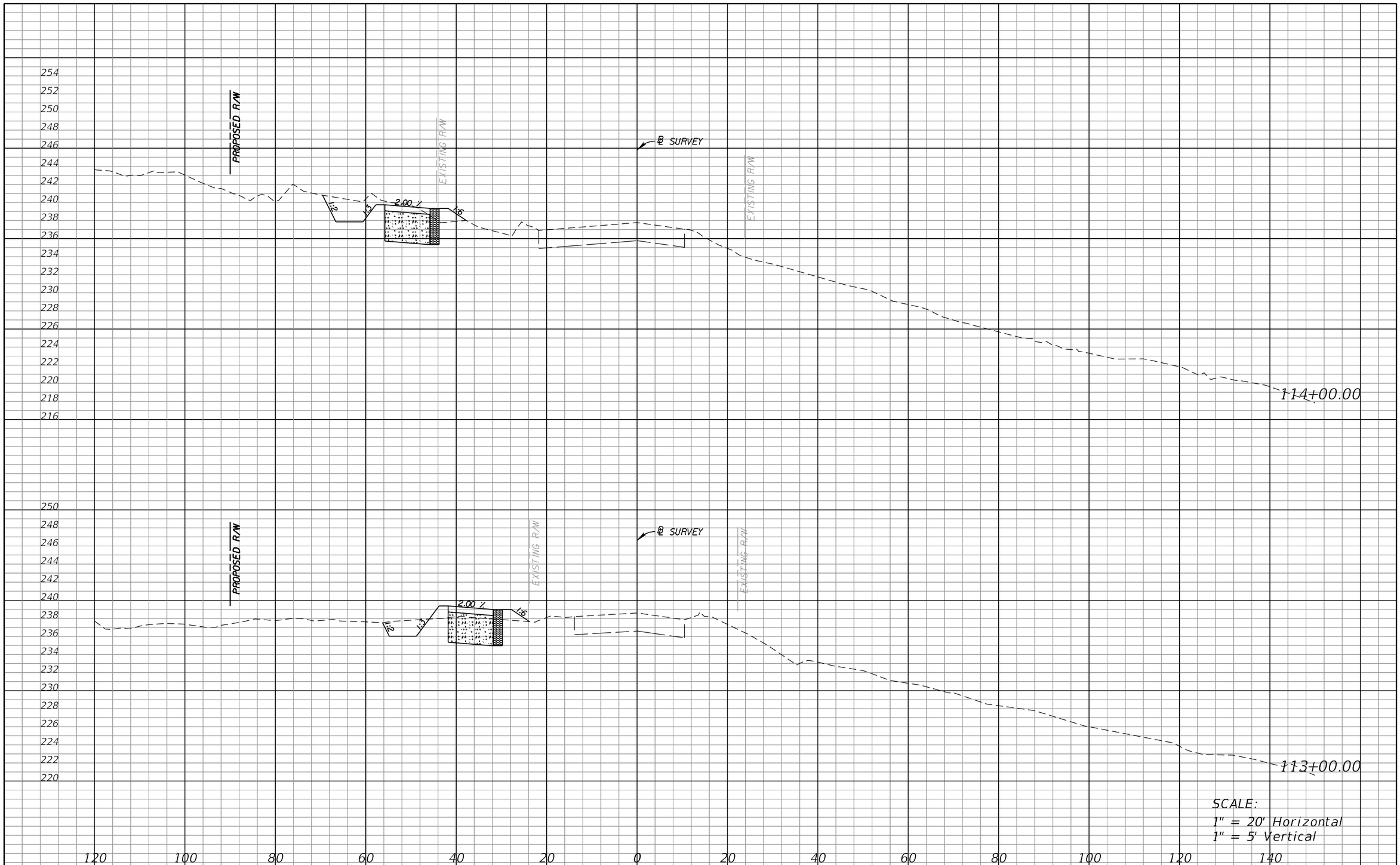

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1" = 5' Vertical

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-5736
813-289-1990
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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SHEET NO. 87

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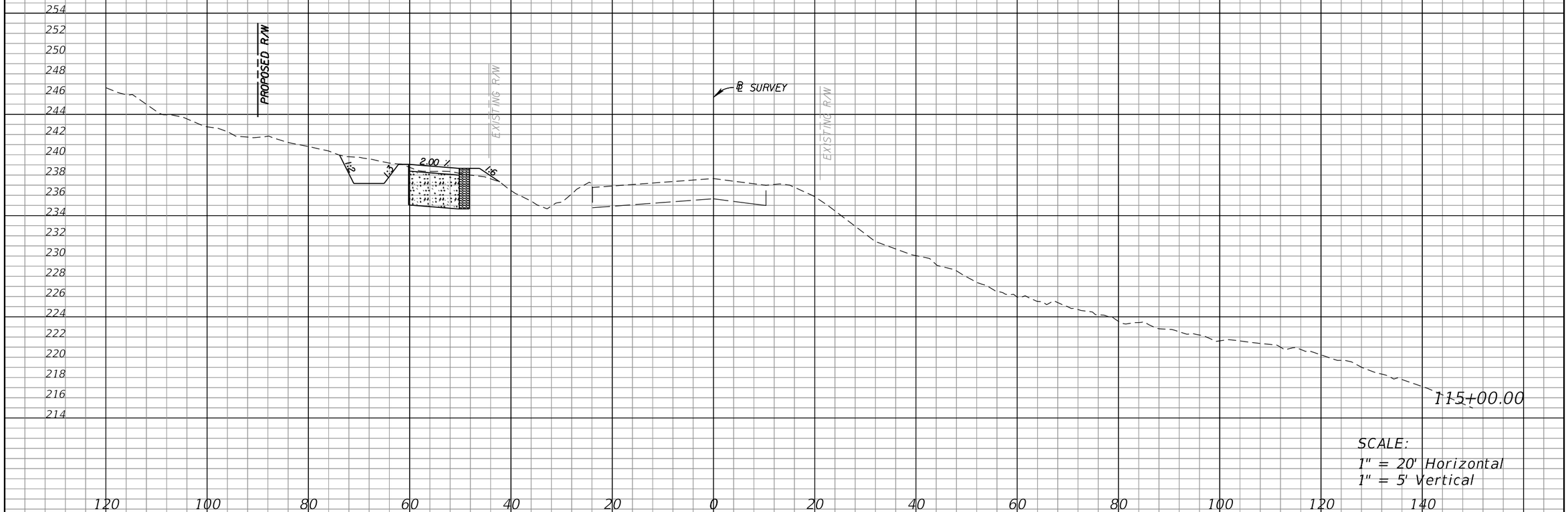

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-962-2550
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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SHEET NO. 88

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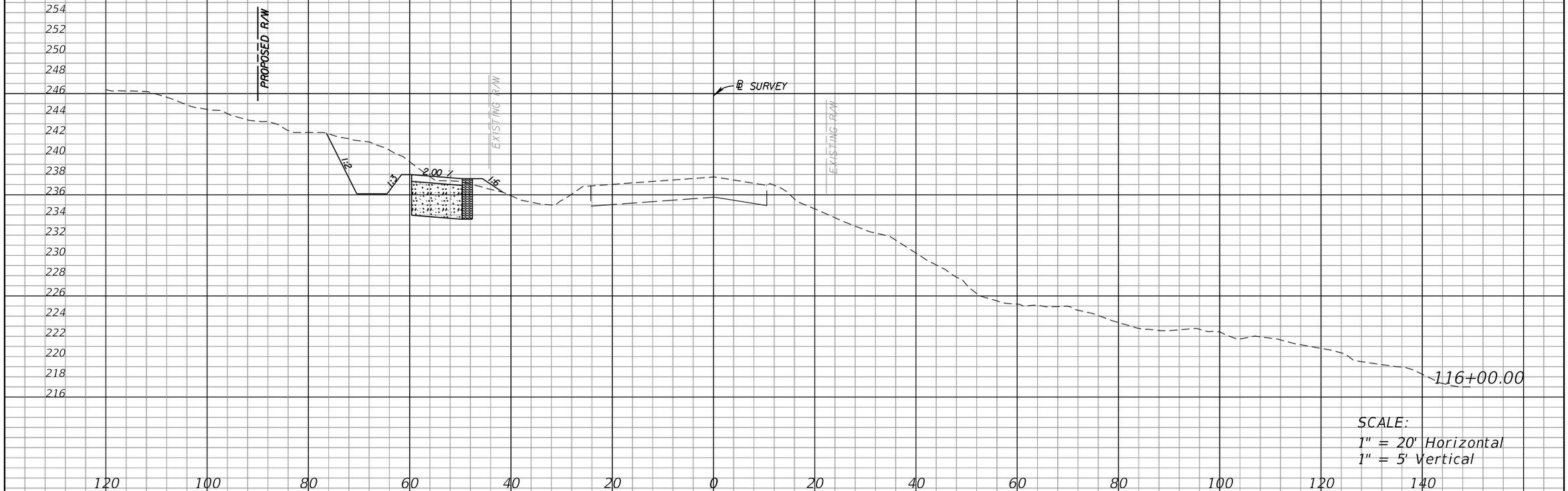

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
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SHEET NO. 89

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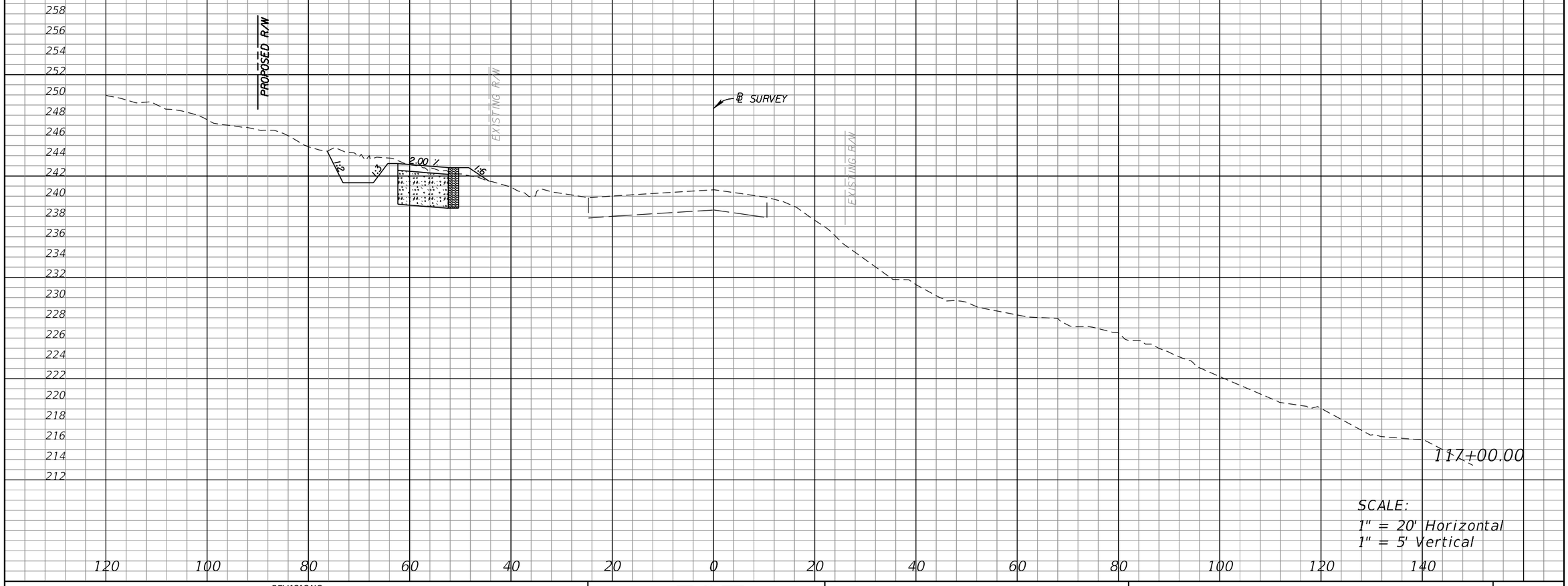

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
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SHEET NO. 90

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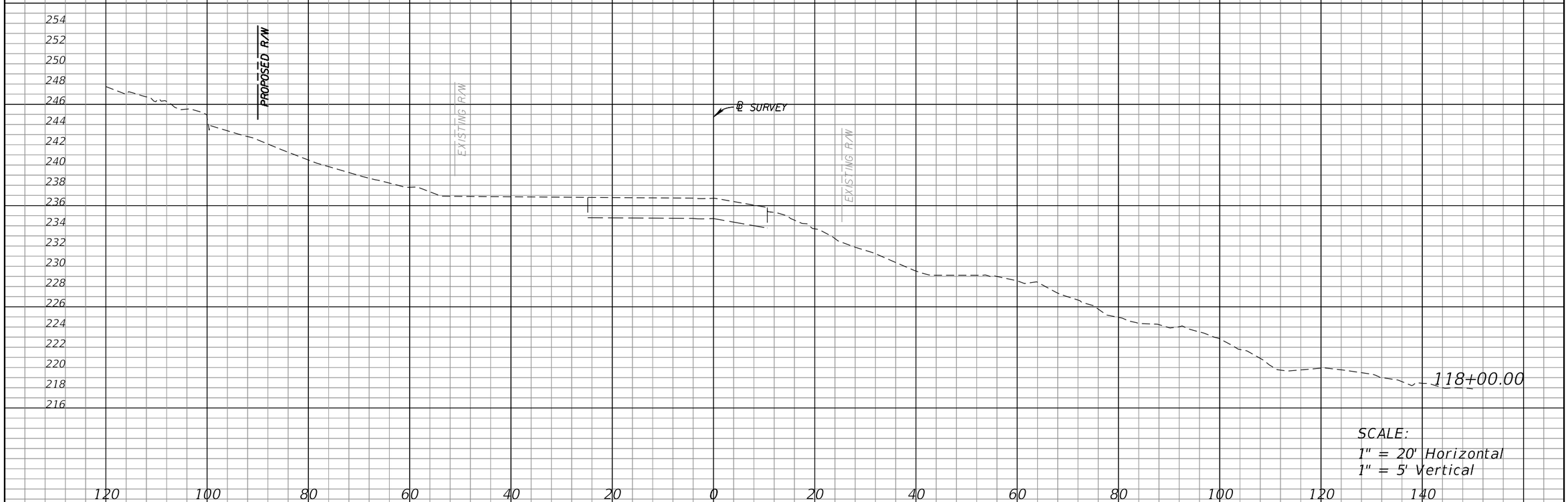

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1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
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SHEET NO. 91

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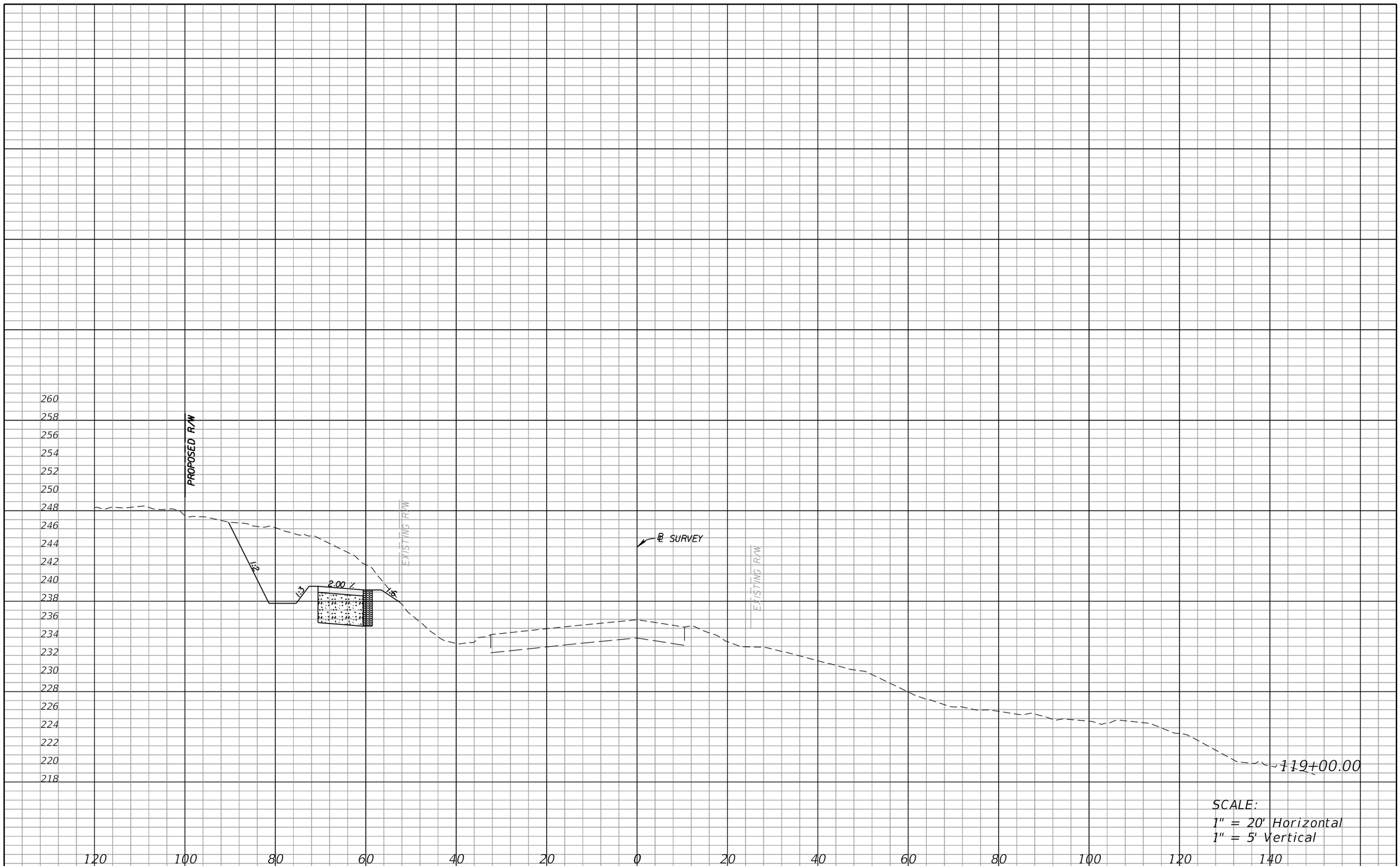

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
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1715 North Westshore Boulevard, Suite 1500
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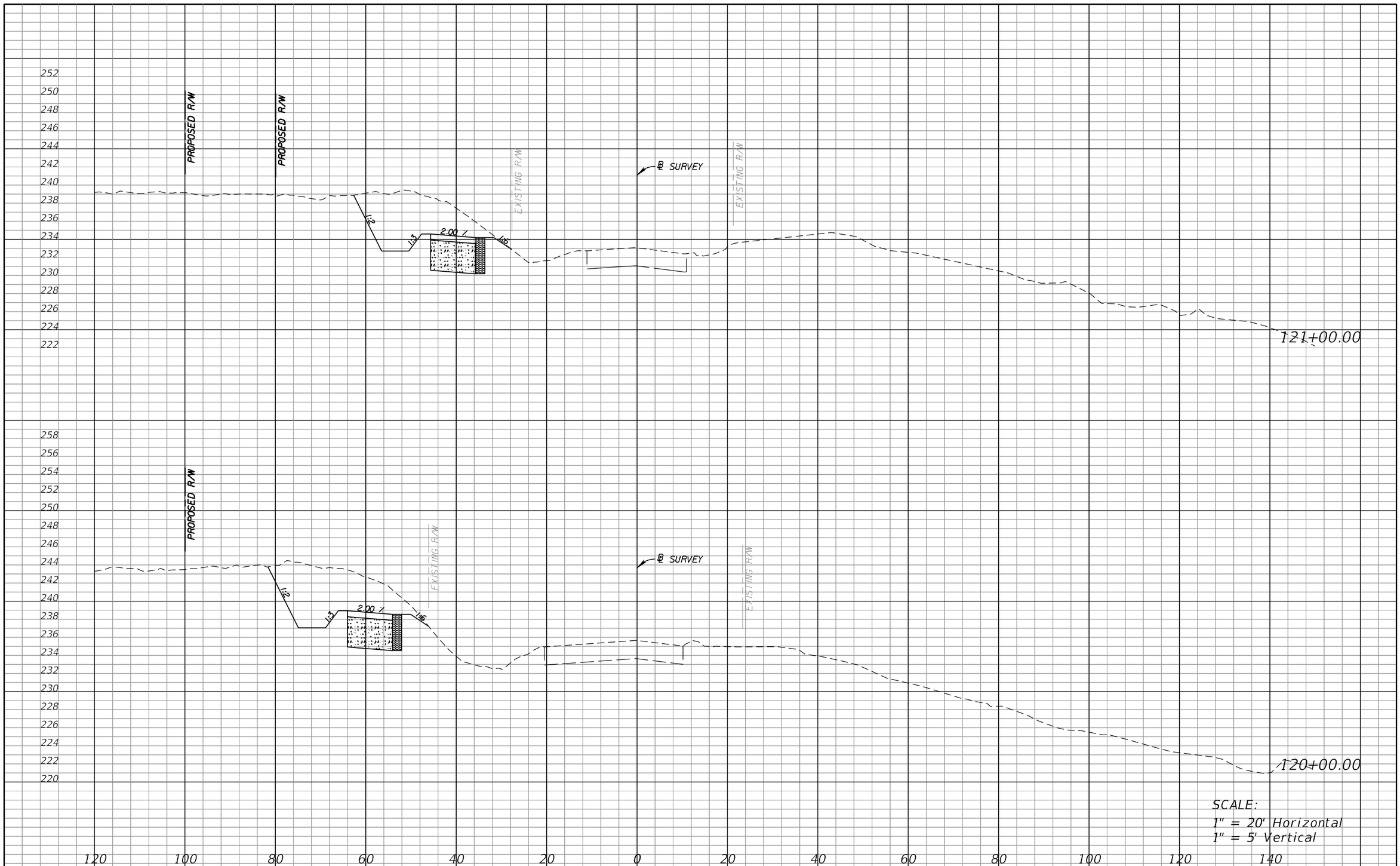

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Reynolds, Smith and Hills, Inc.
1715 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33607-3825
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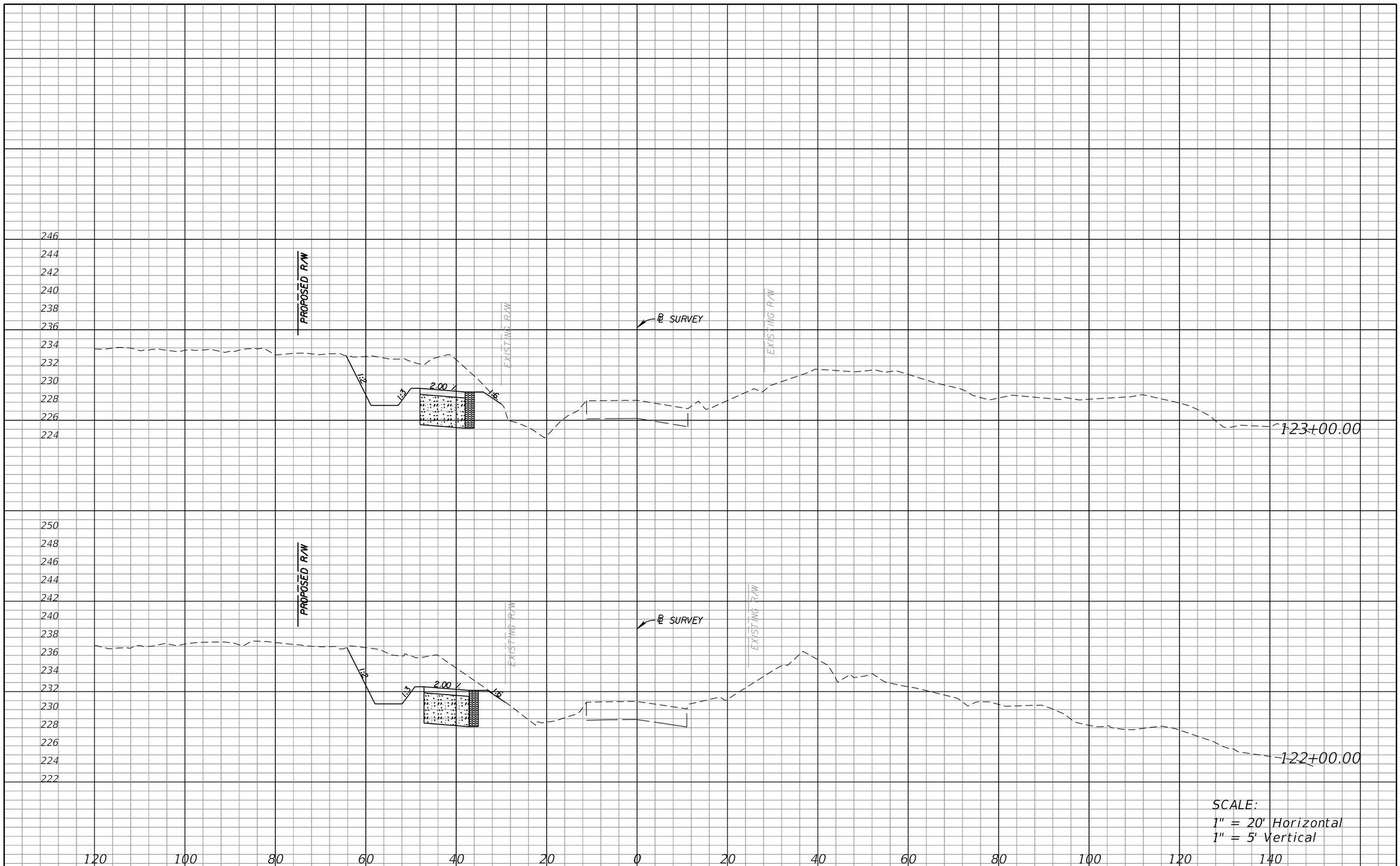

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
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SHEET NO. 94

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REVISIONS			
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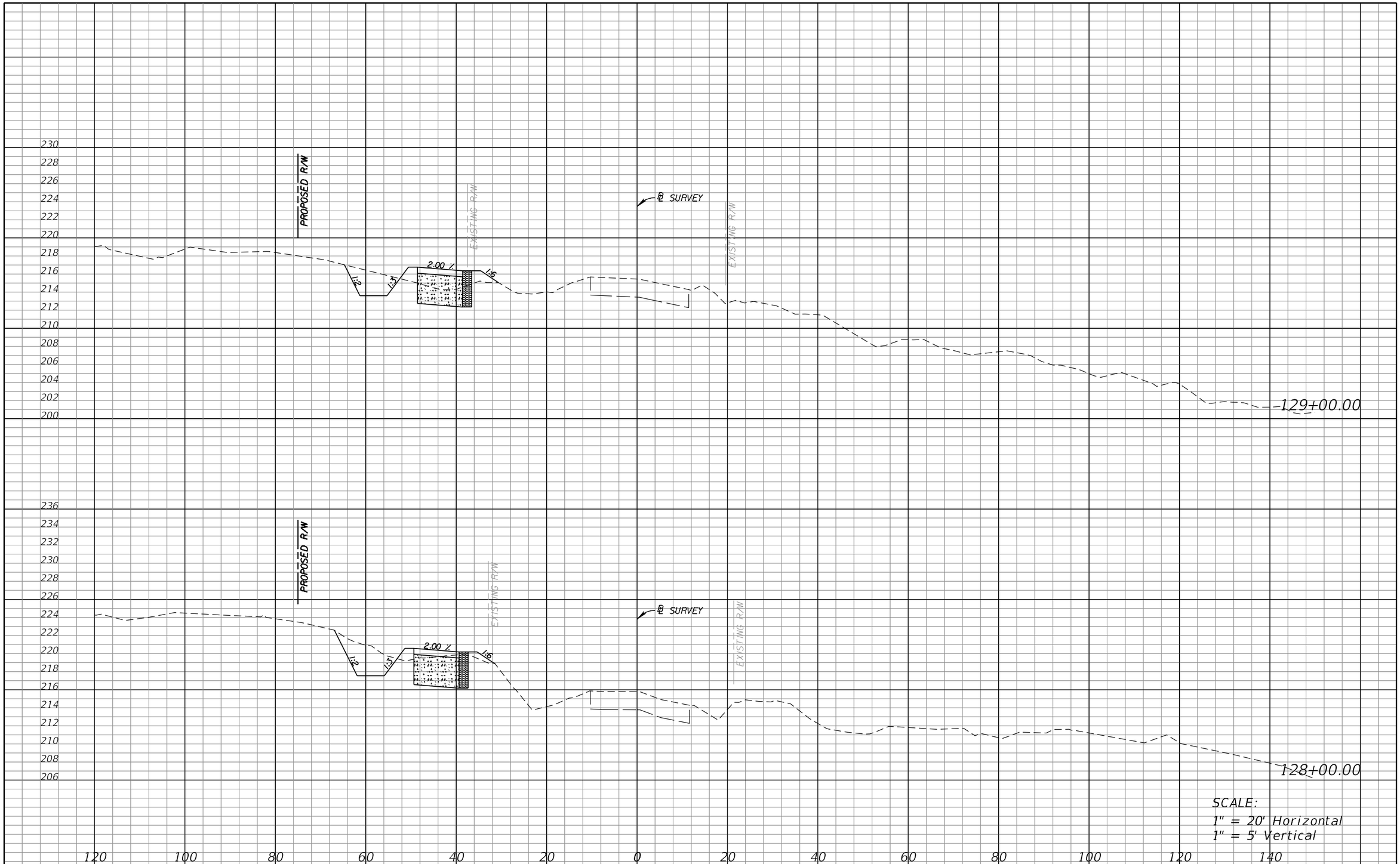

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
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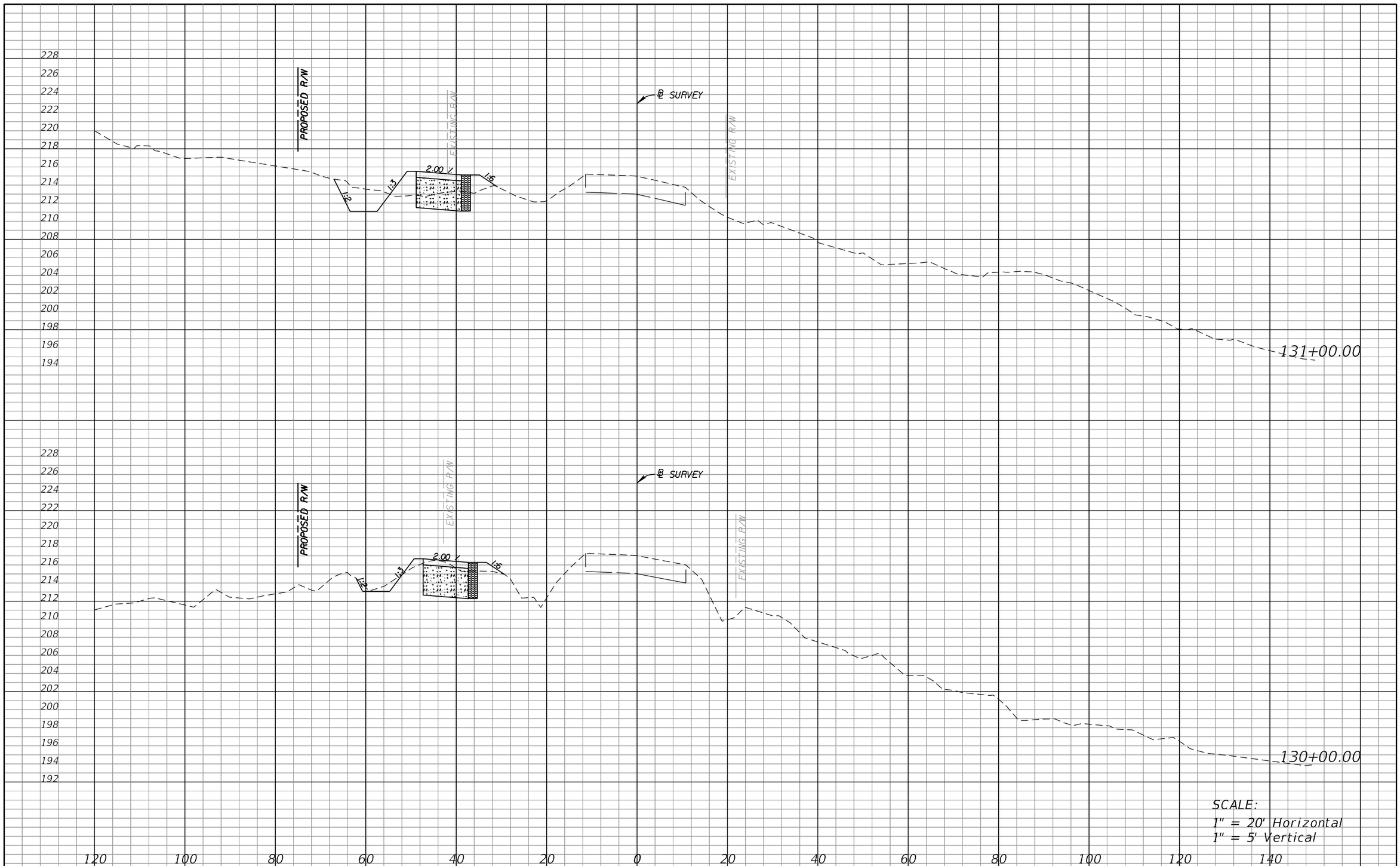

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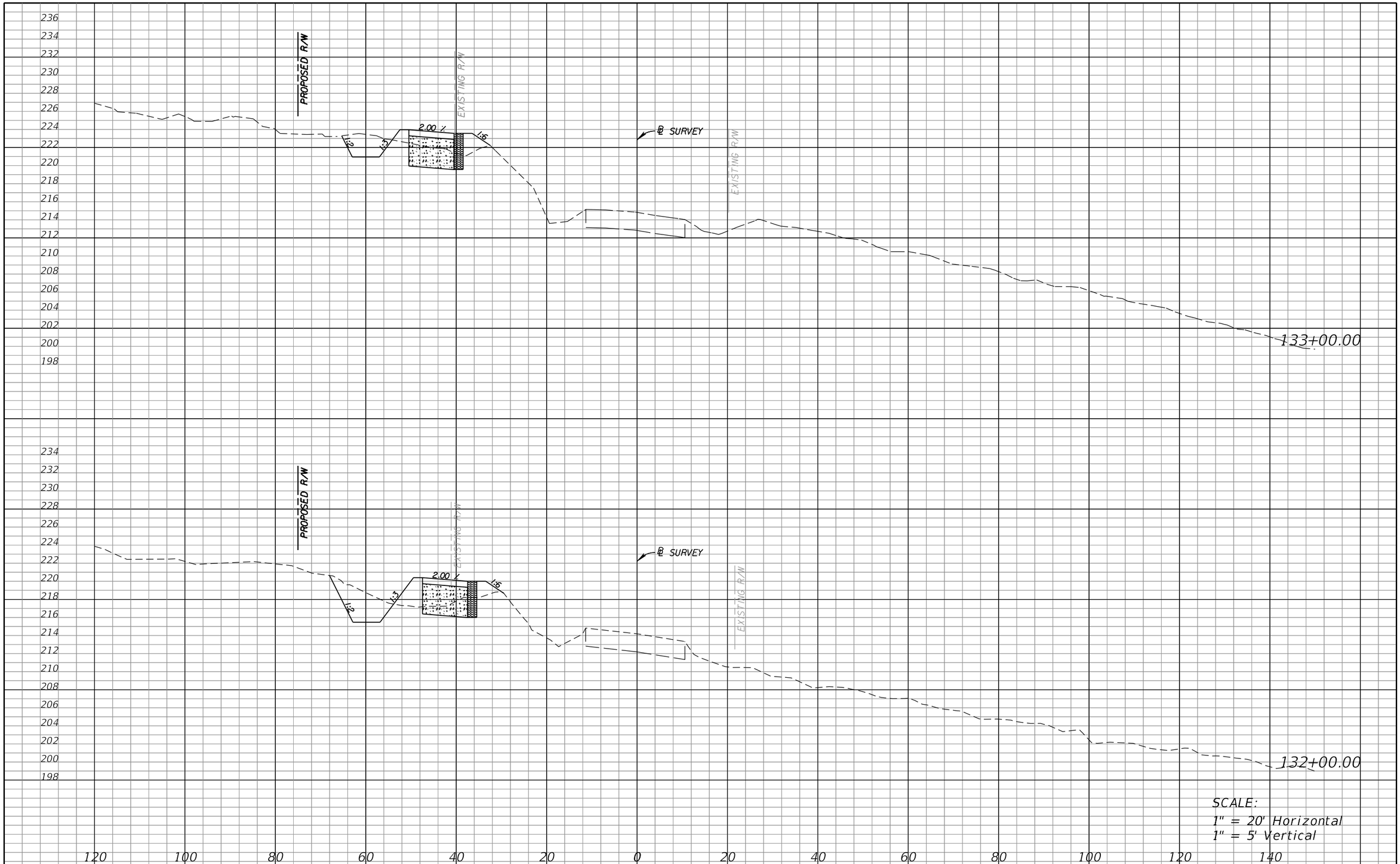

REVISIONS			
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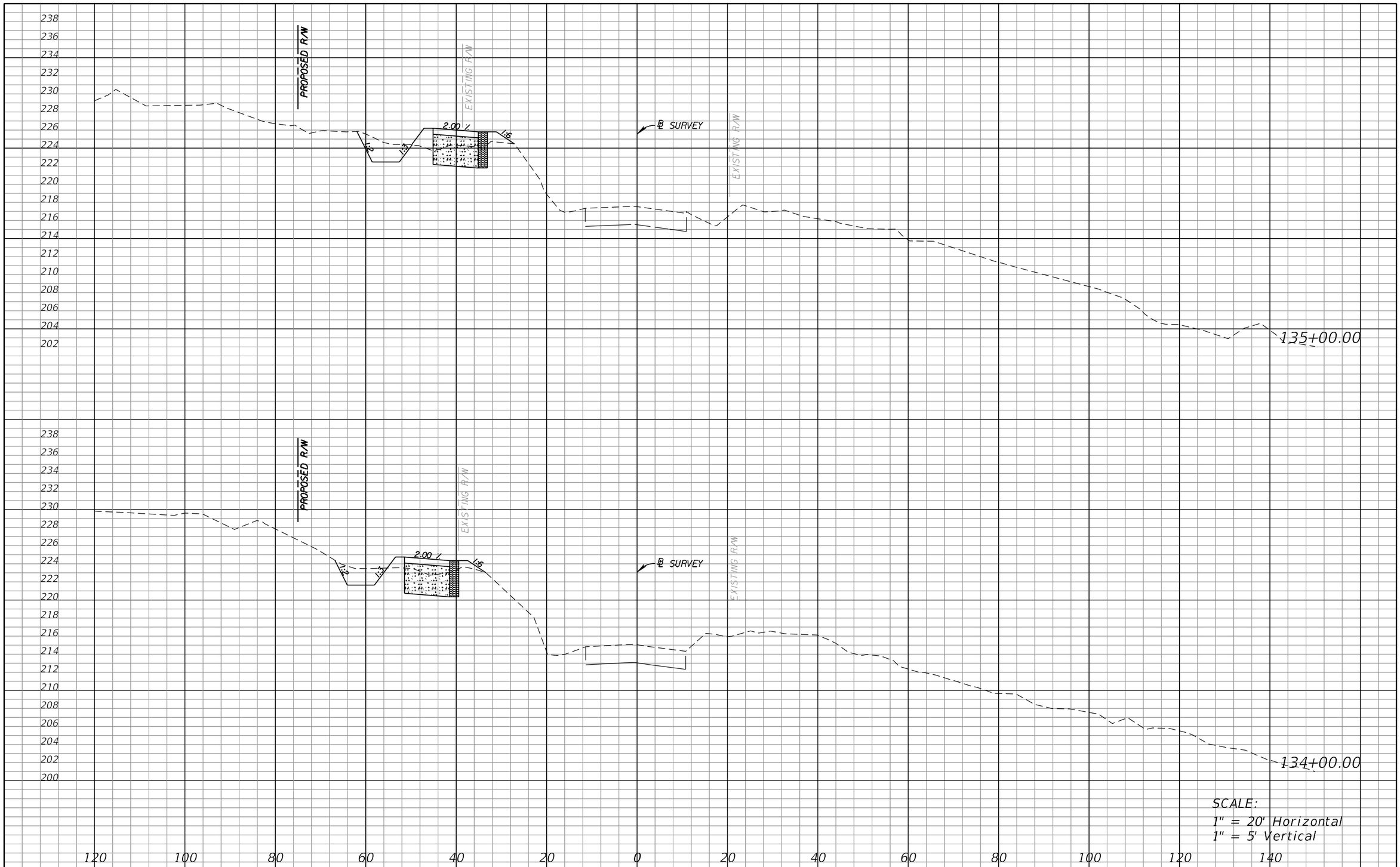

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
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1715 North Westshore Boulevard, Suite 1500
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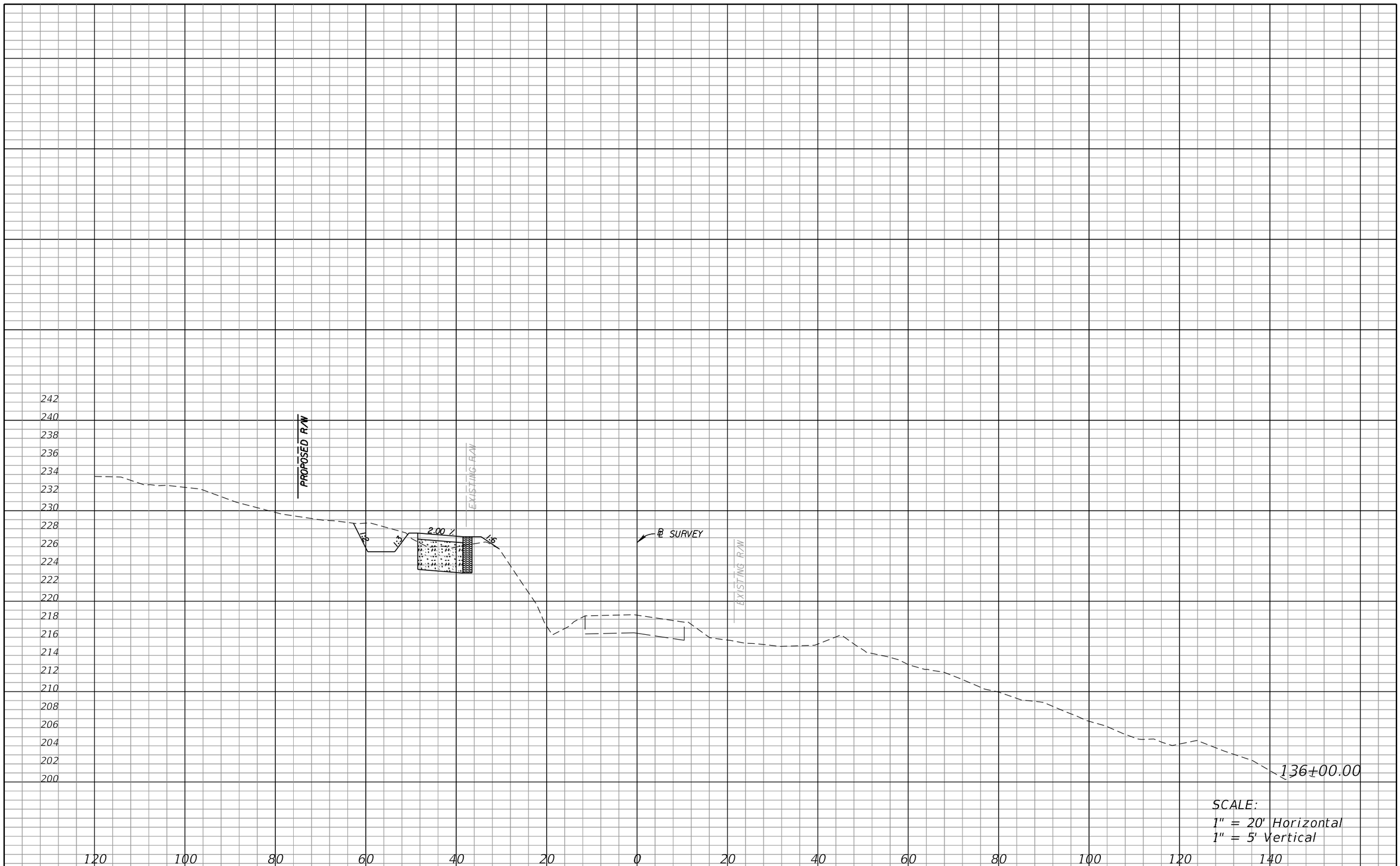

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-289-1990
Certificate of Authorization No. 5620
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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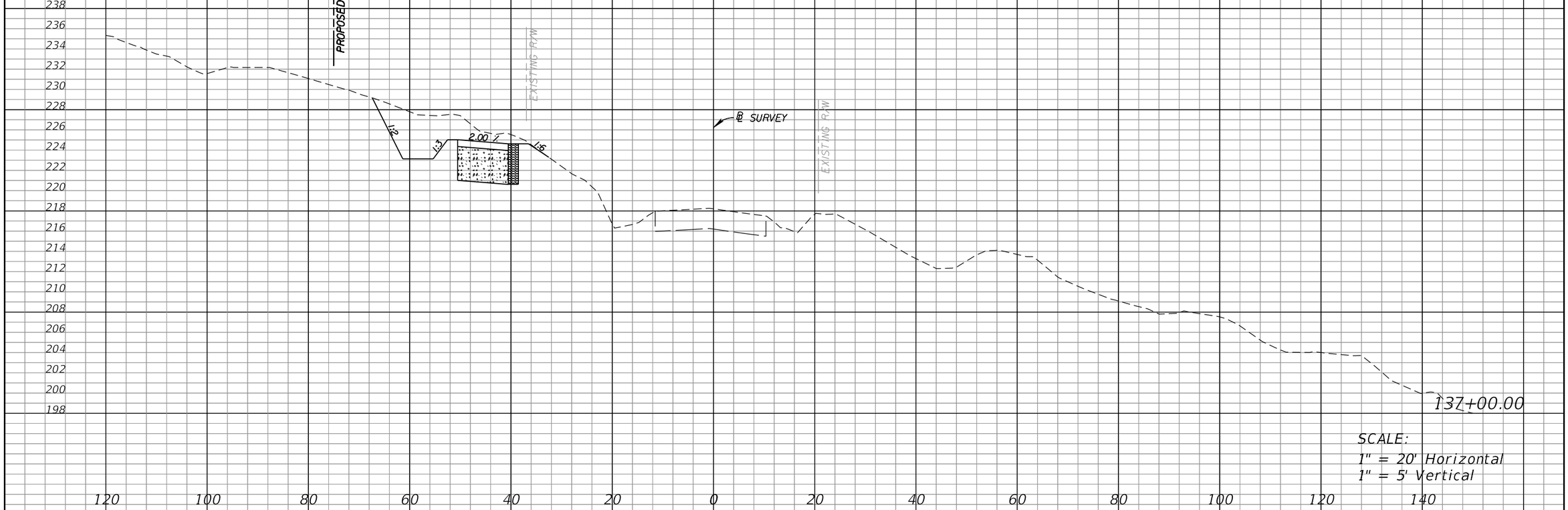

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
813-552-2550
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CROSS SECTIONS

SHEET NO. 102

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 103

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
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SHEET NO. 104

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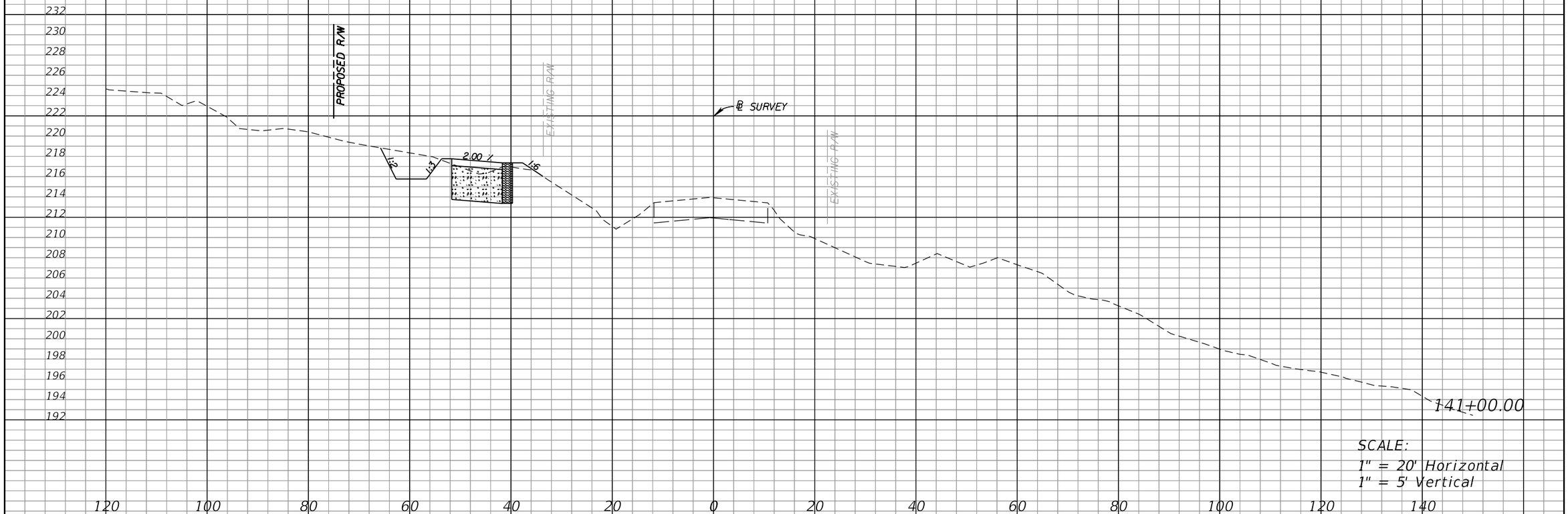

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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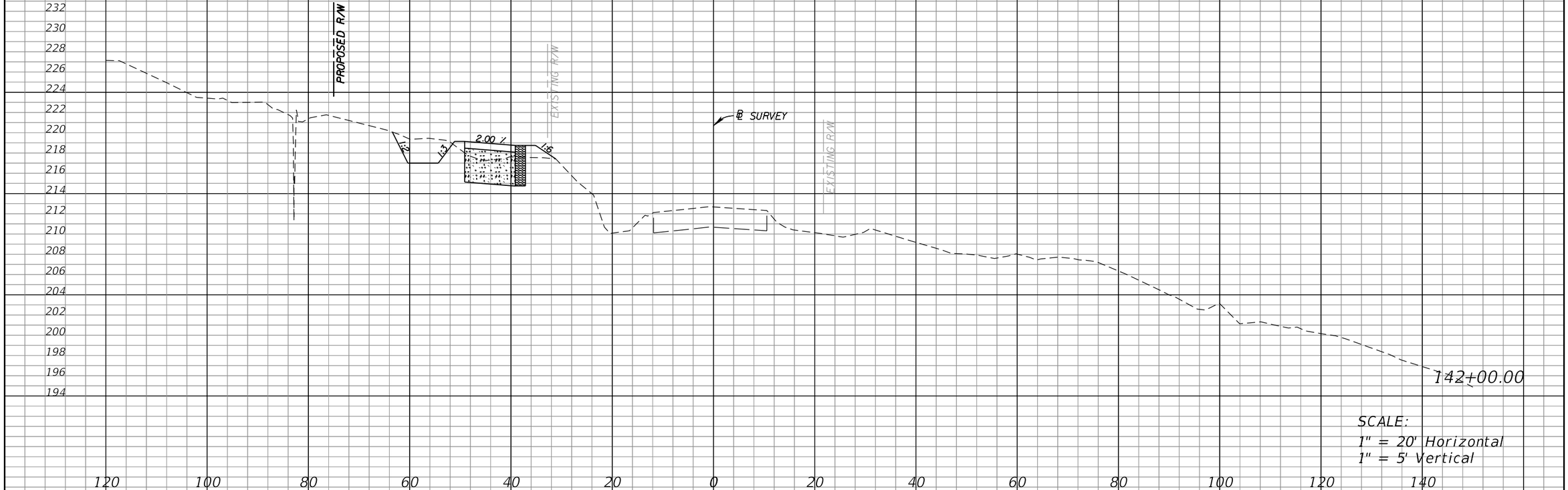

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REVISIONS			
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SHEET NO. 107

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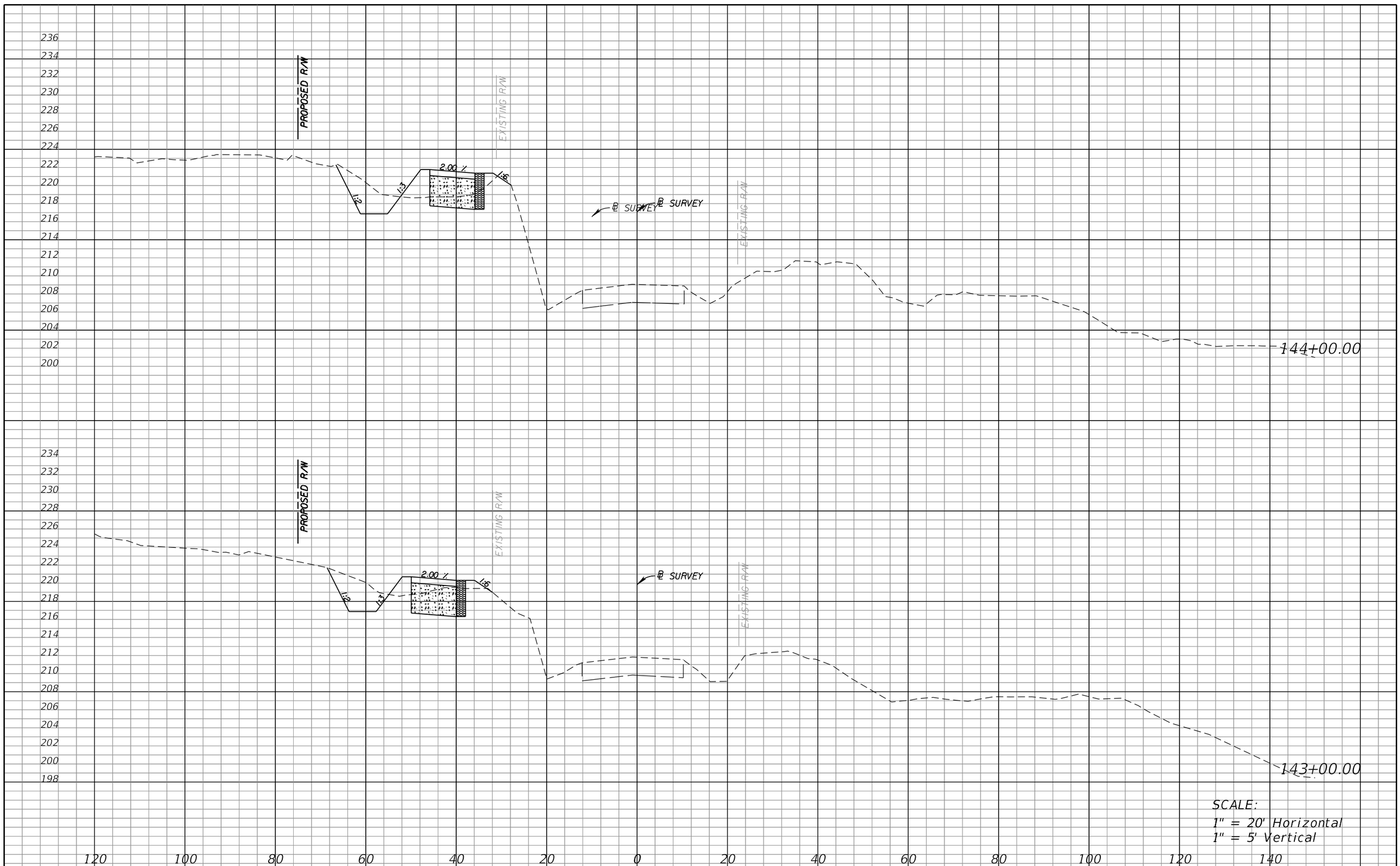

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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CROSS SECTIONS

SHEET NO. 109

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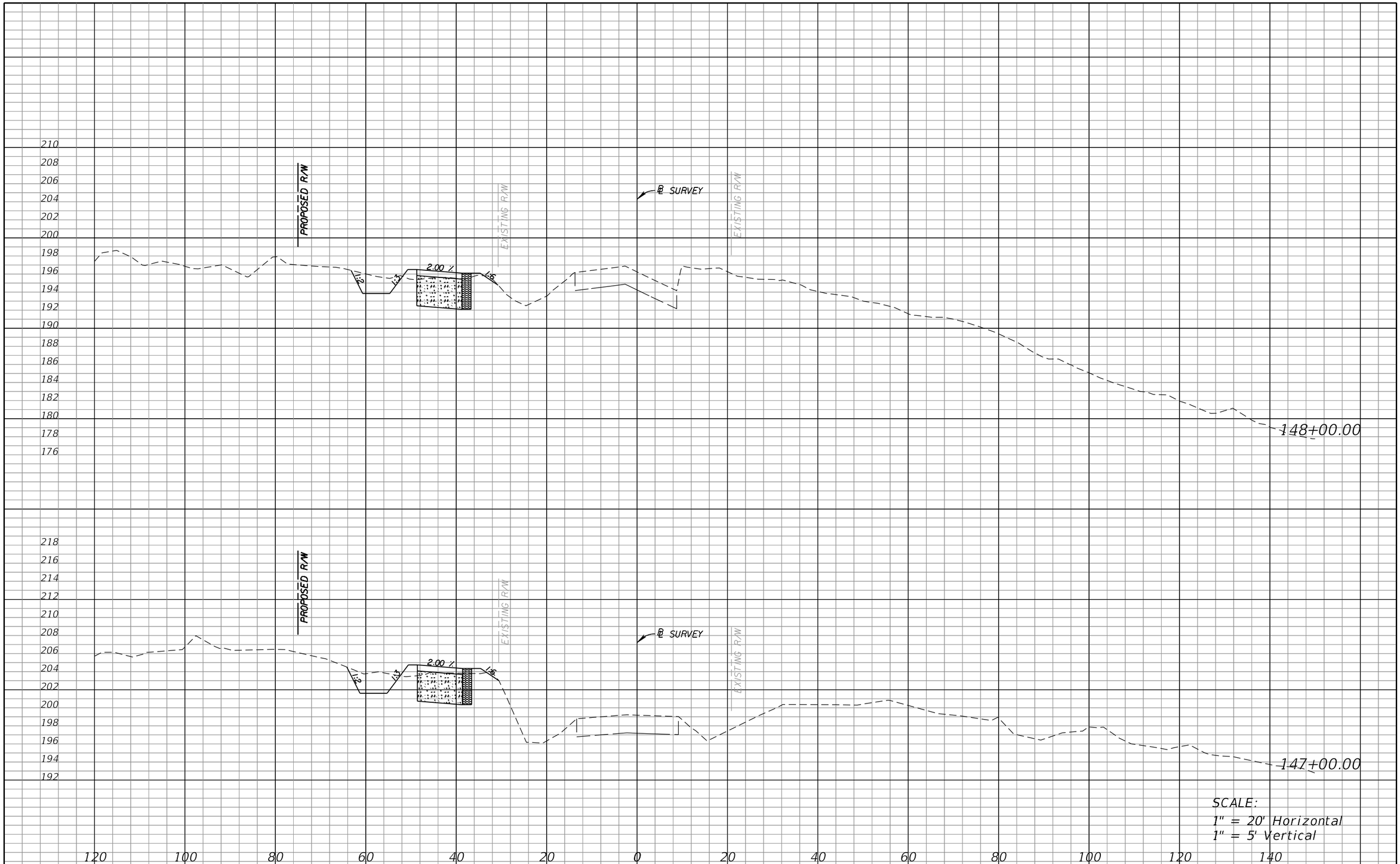

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
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17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
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SHEET NO. 110

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SCALE:
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REVISIONS			
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CROSS SECTIONS

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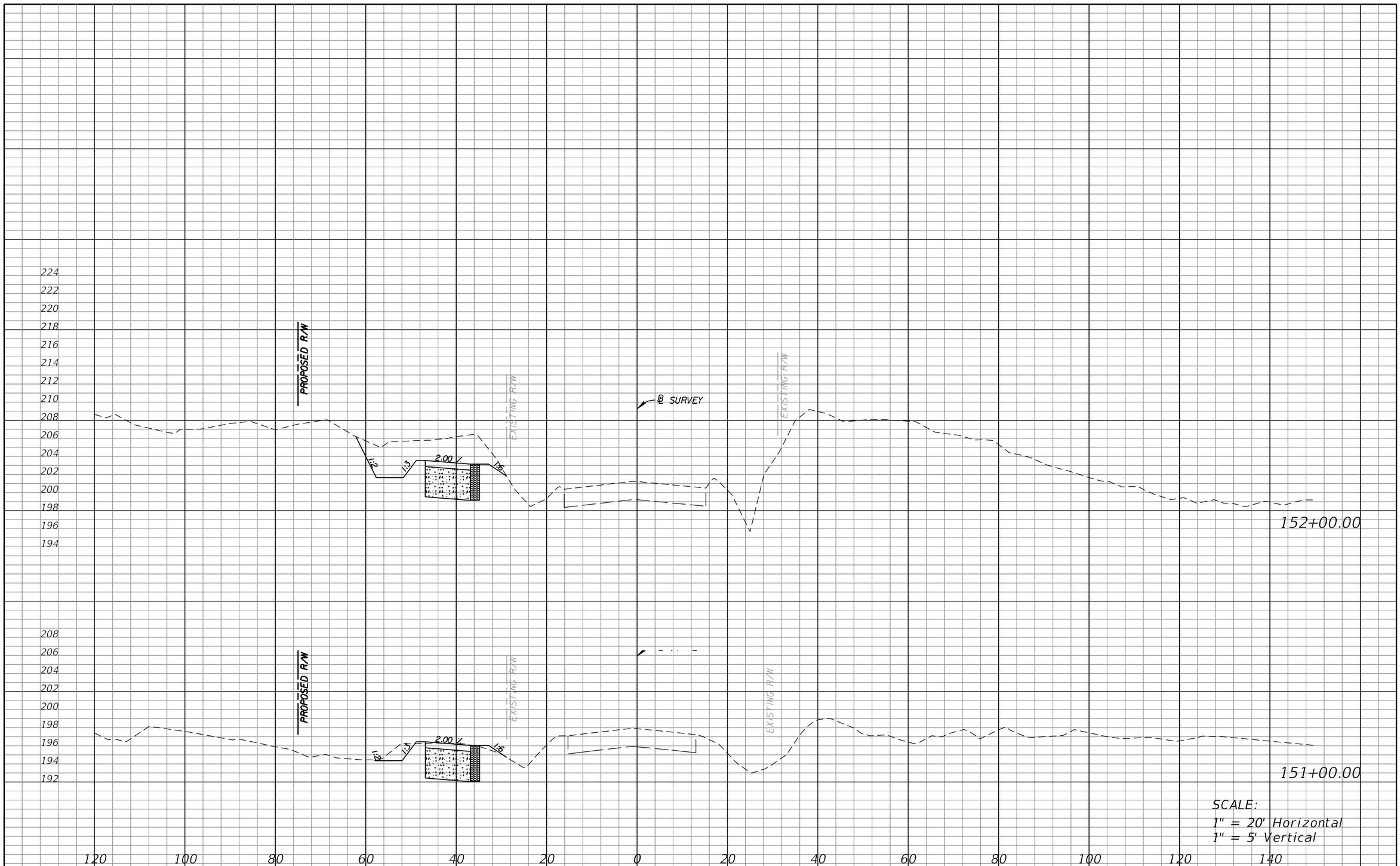

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
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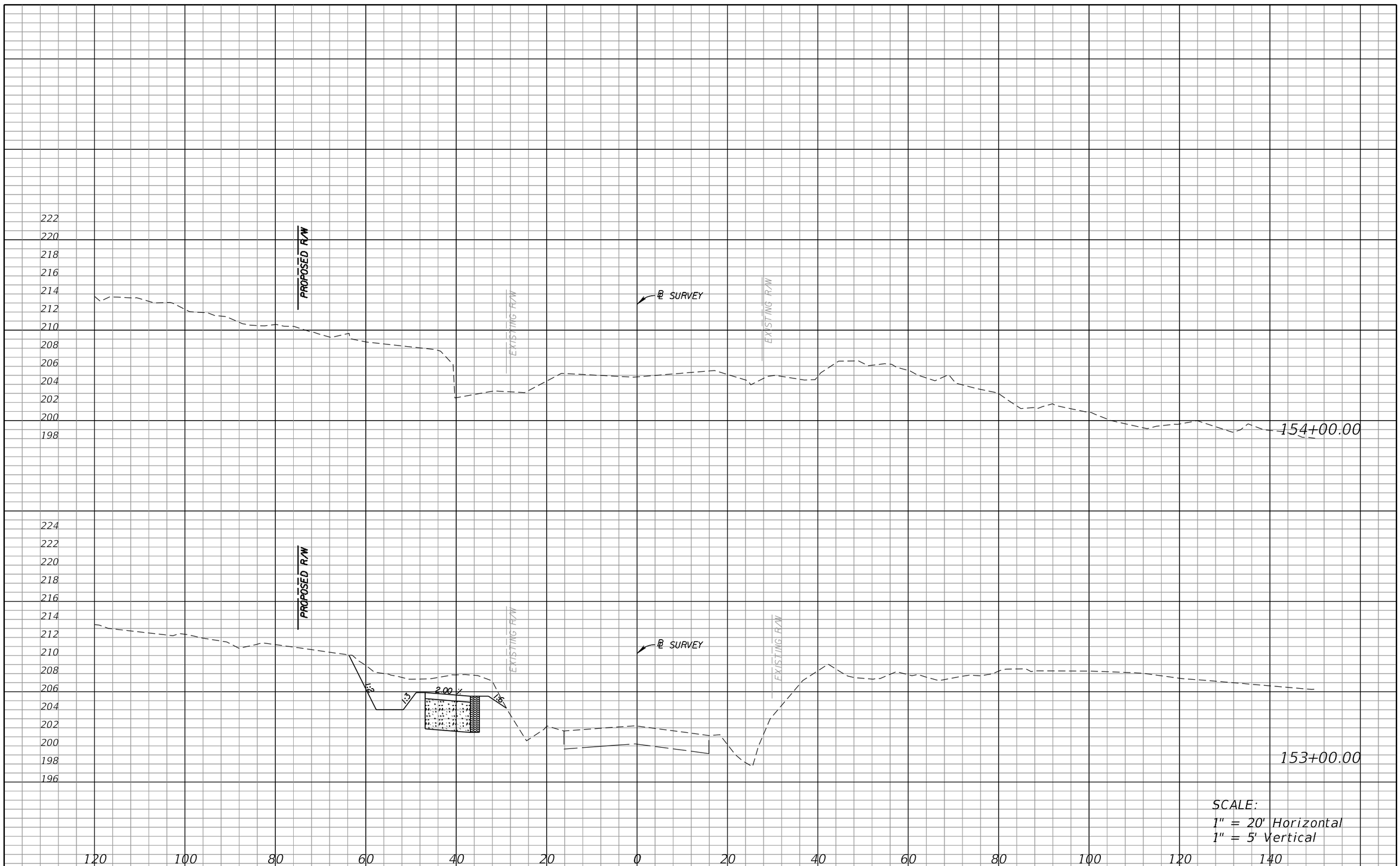
SHEET NO. 112



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RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
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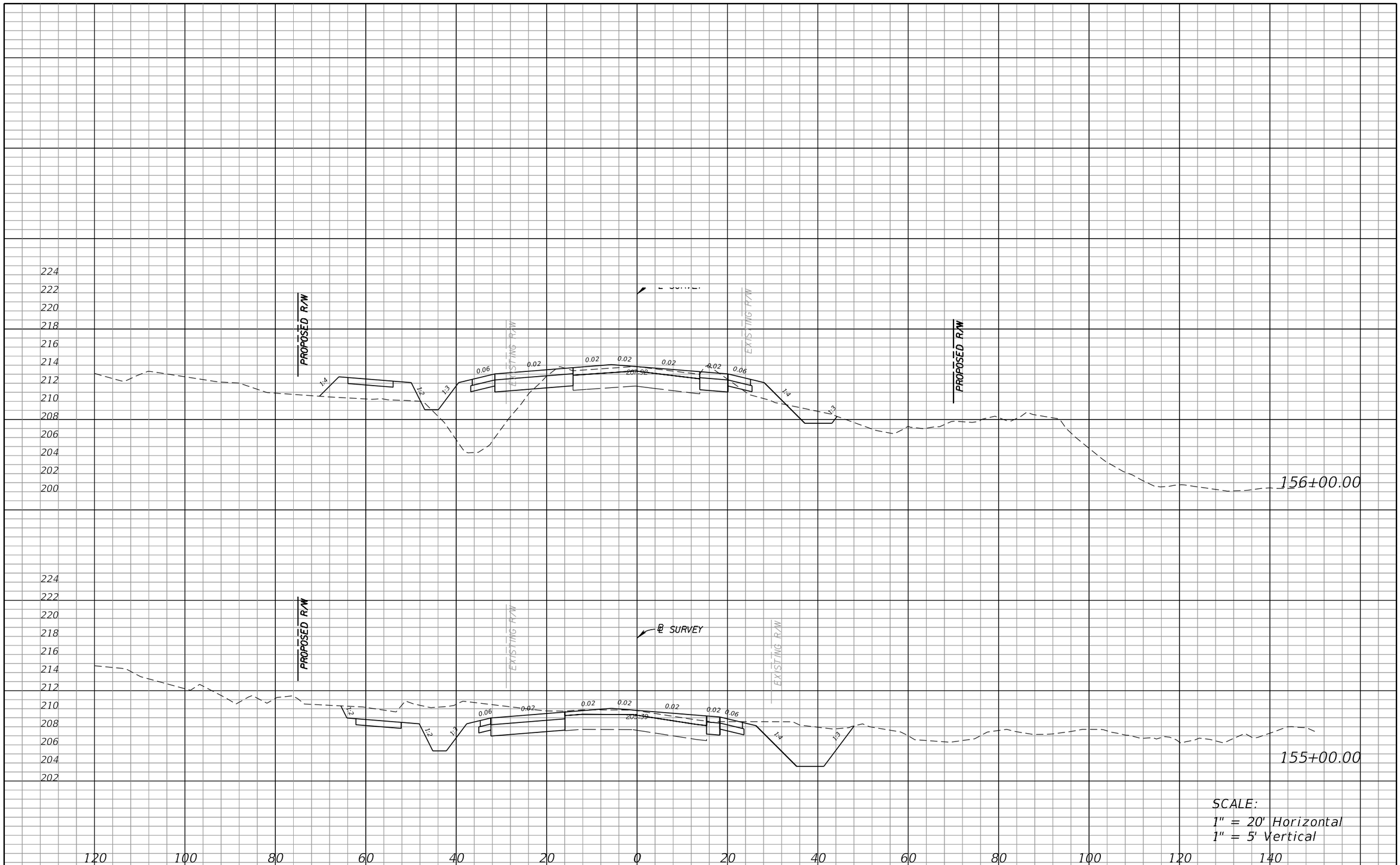

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
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LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 114

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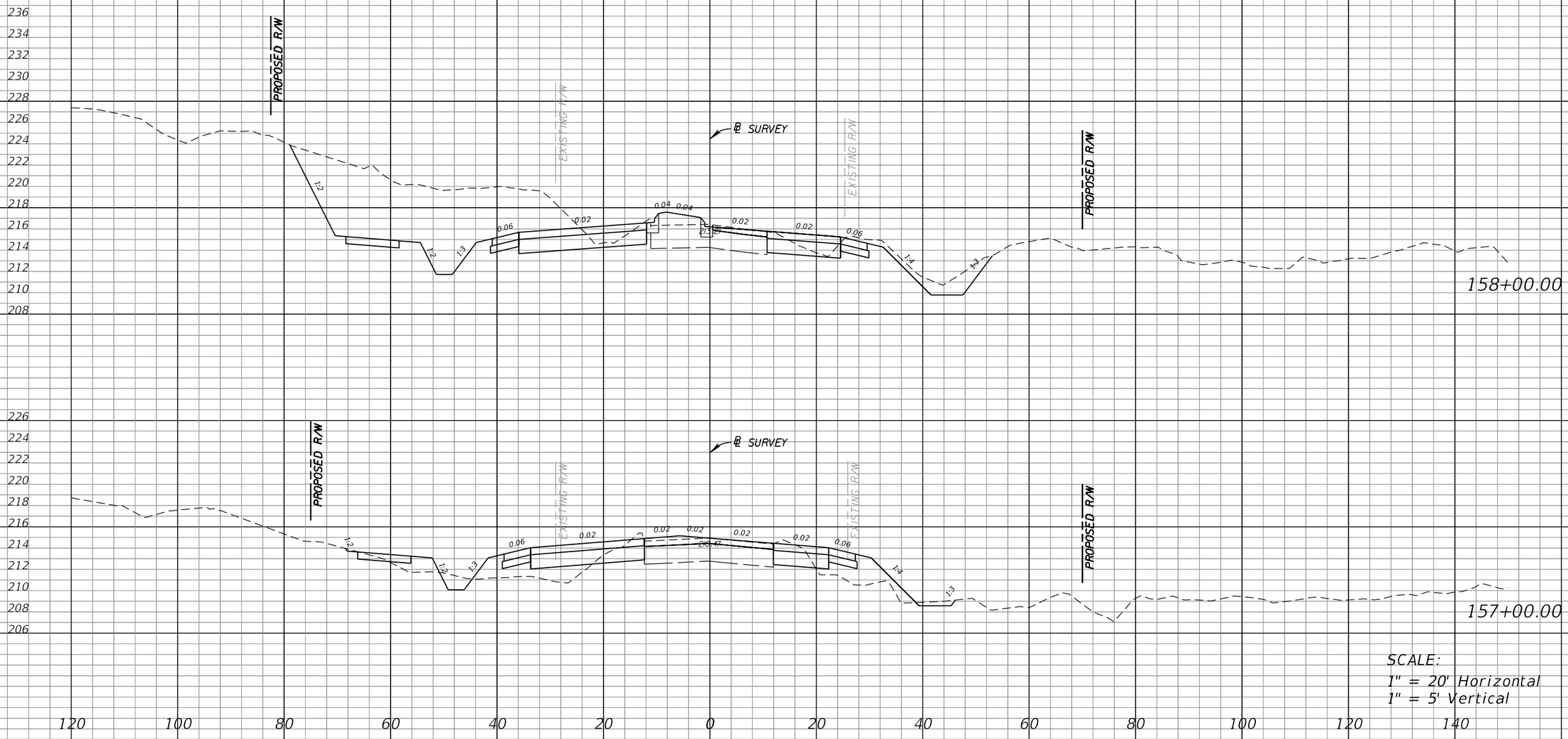


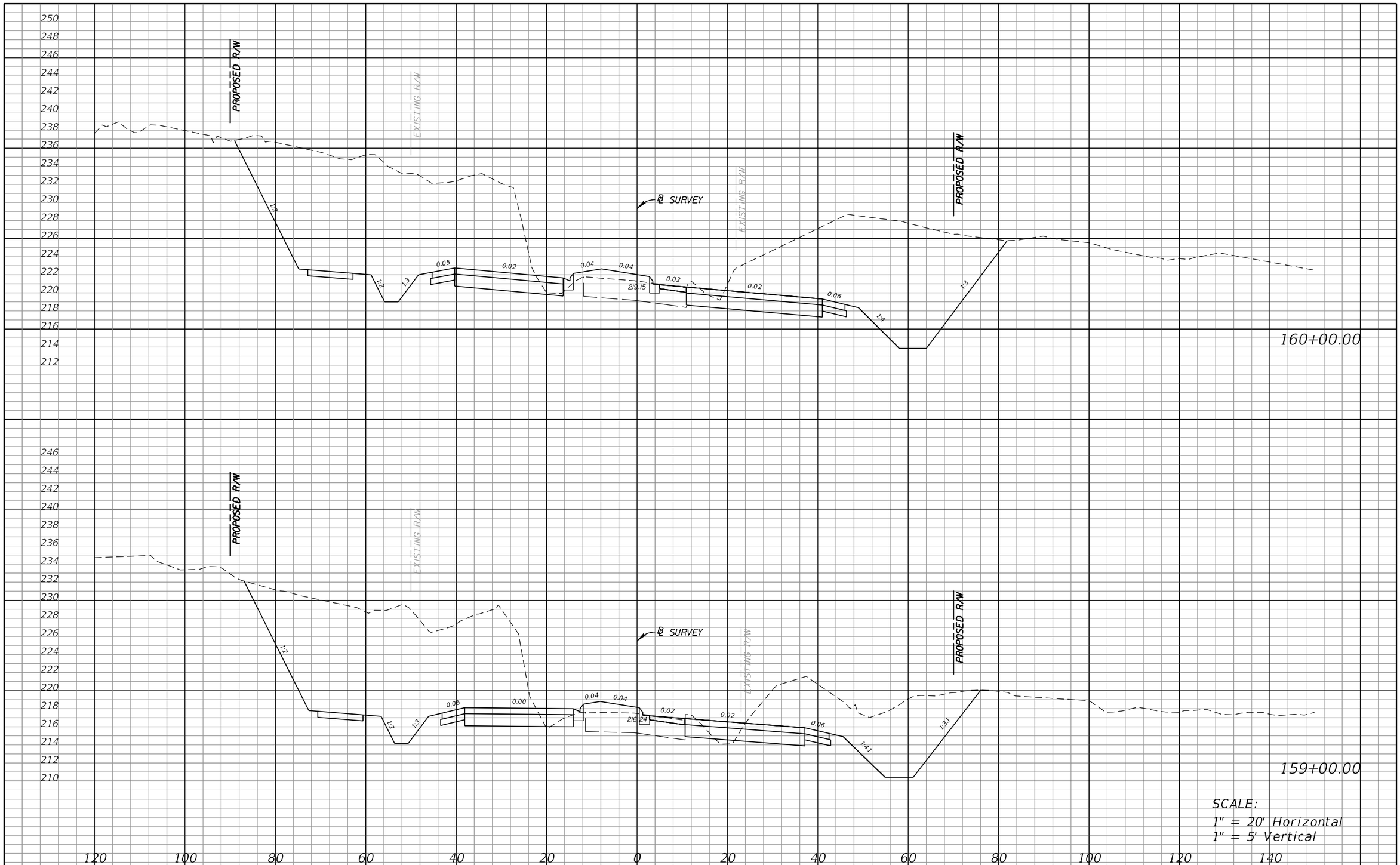
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-2325
813-289-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 115



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-3729
813-289-1990
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 116

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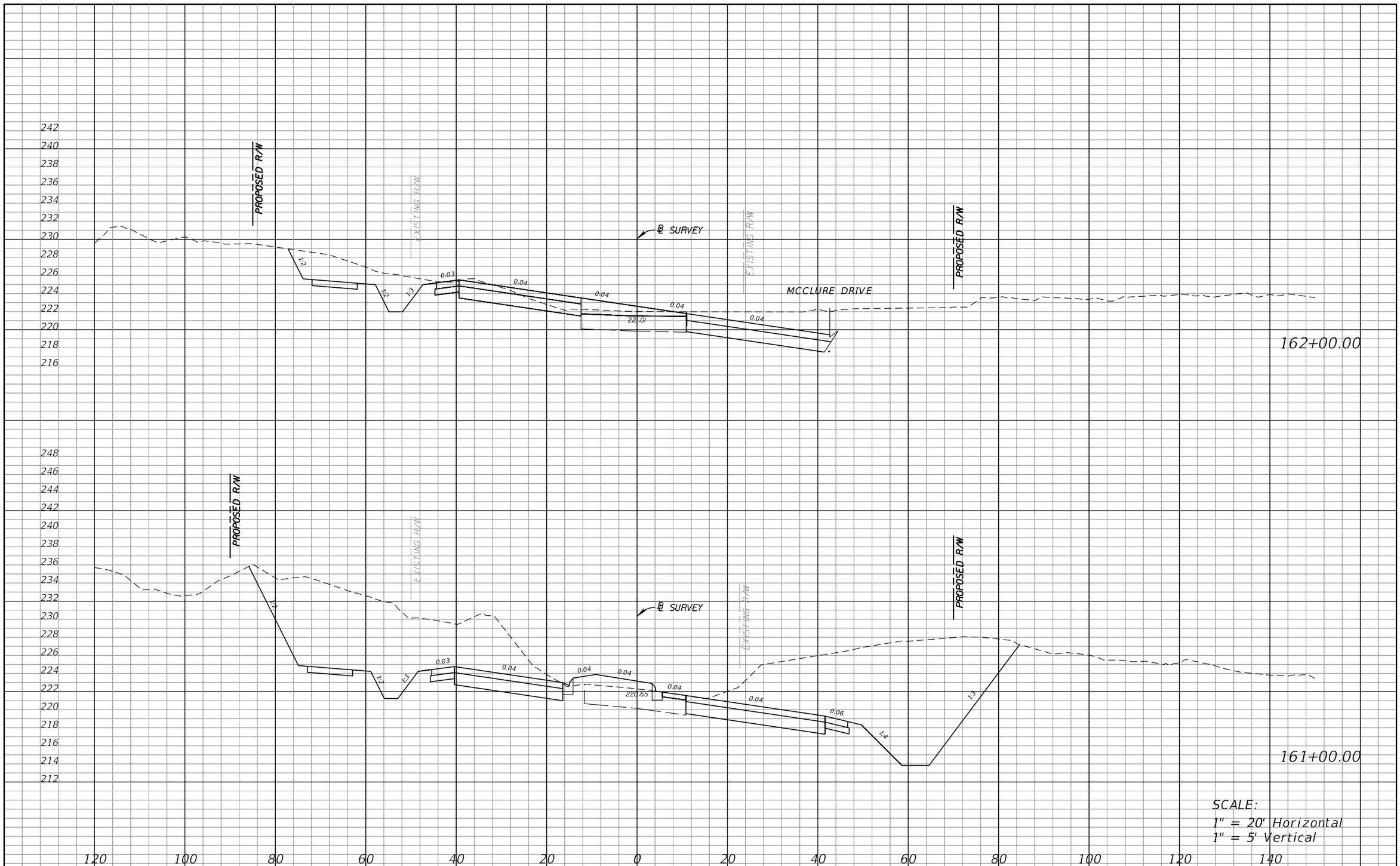

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2516
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 117

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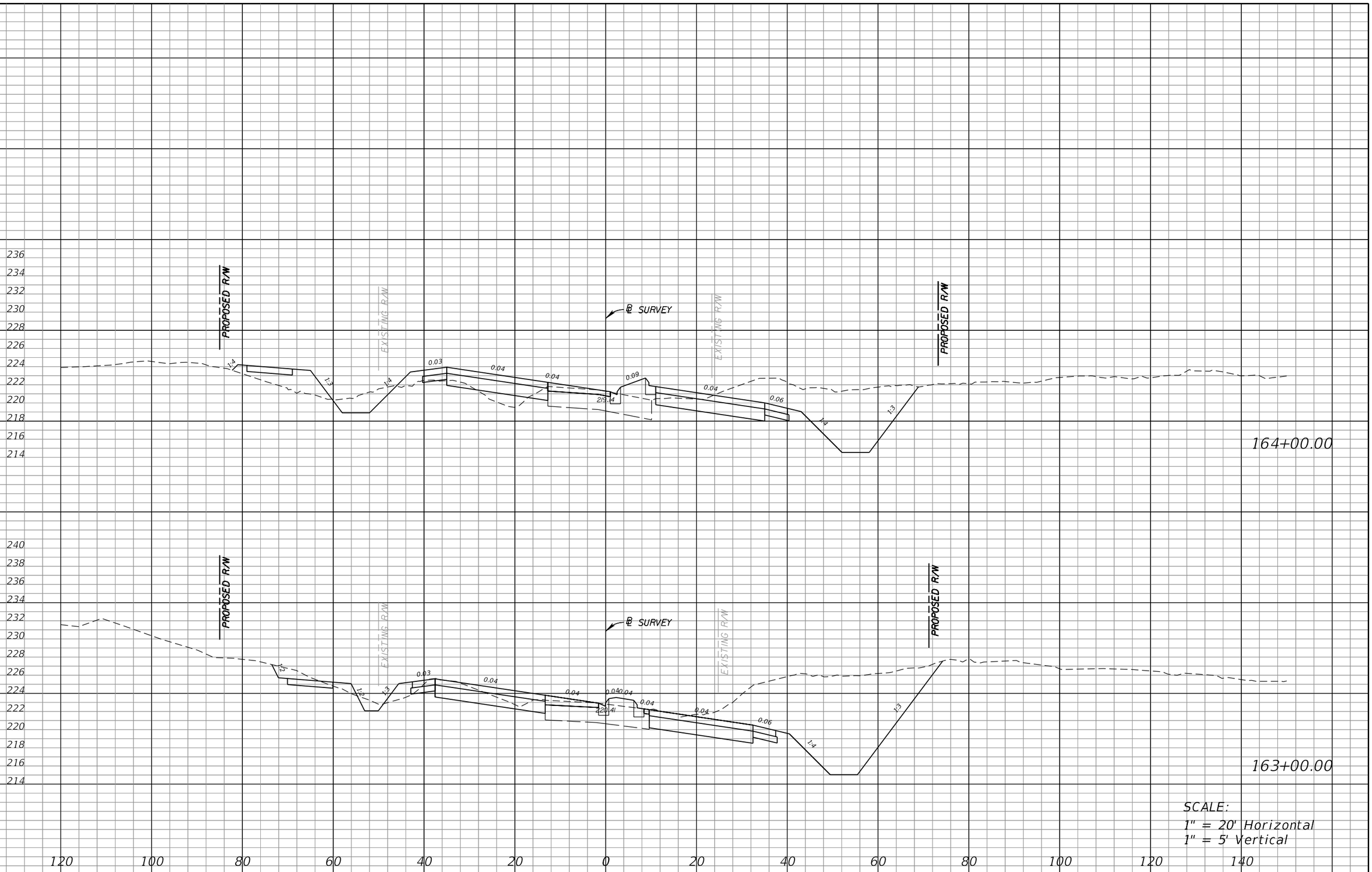

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 Commonwealth Boulevard, Suite 1500
Tallahassee, Florida 32303-4067
850-558-2560
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

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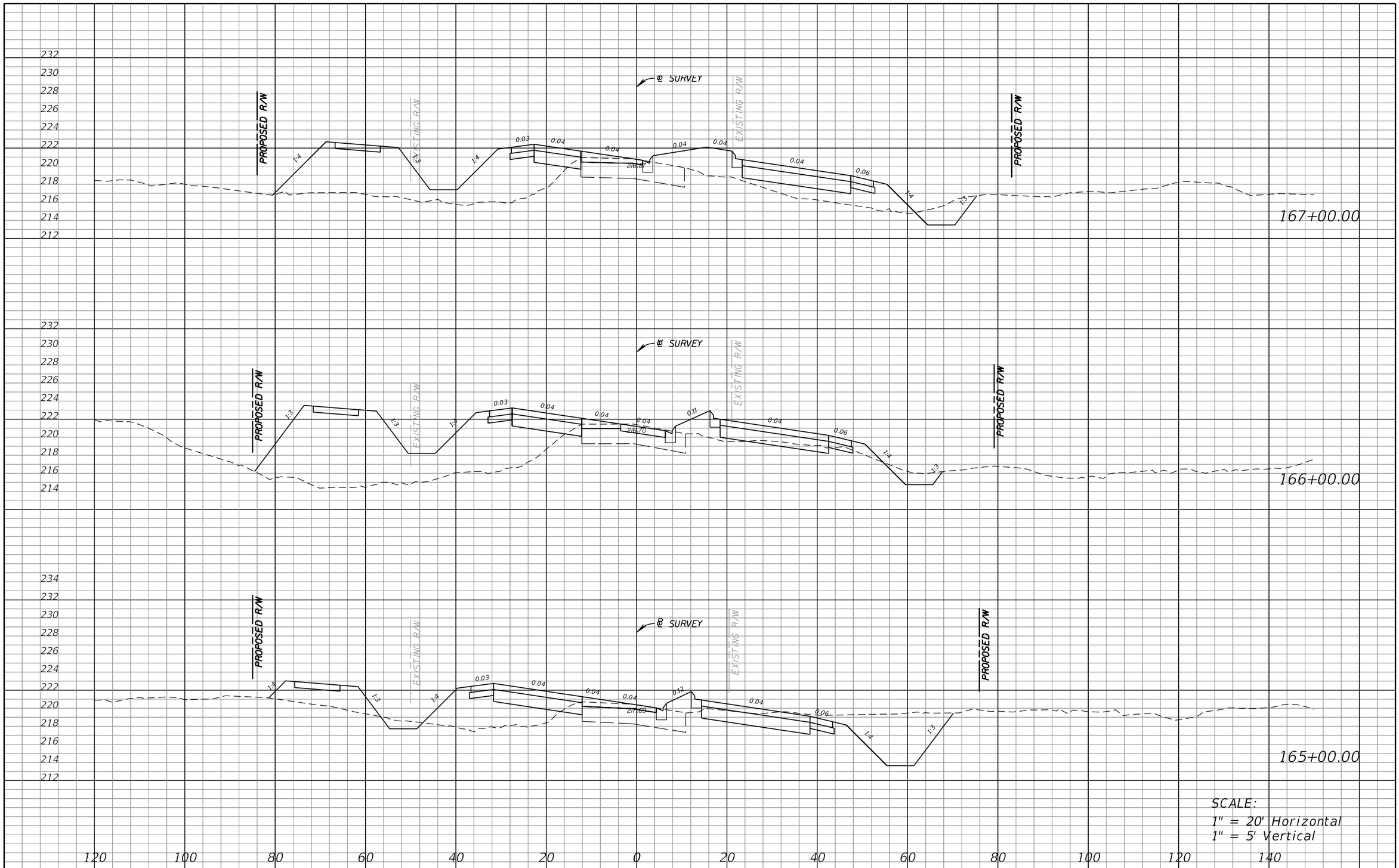

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-2325
813-289-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

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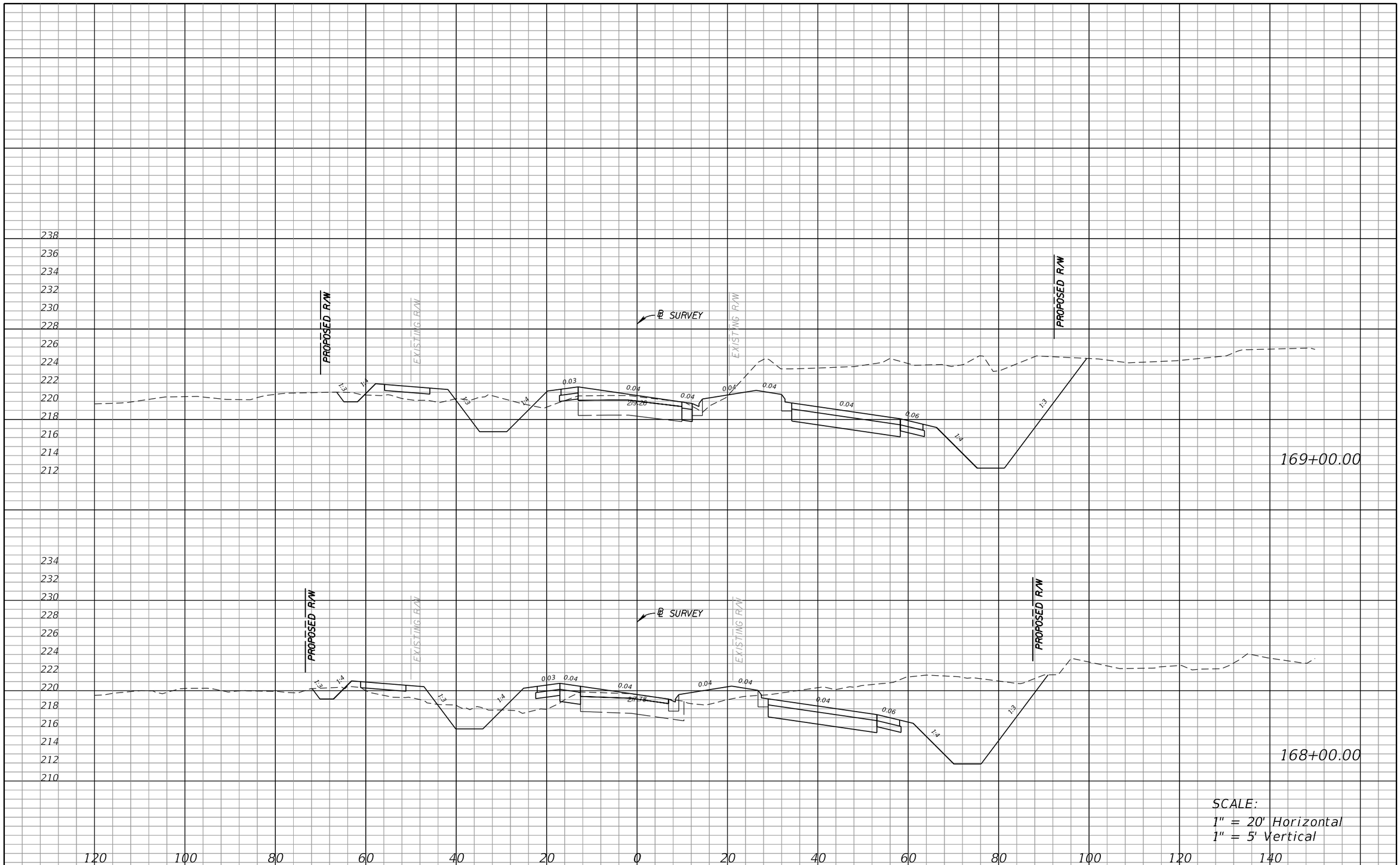

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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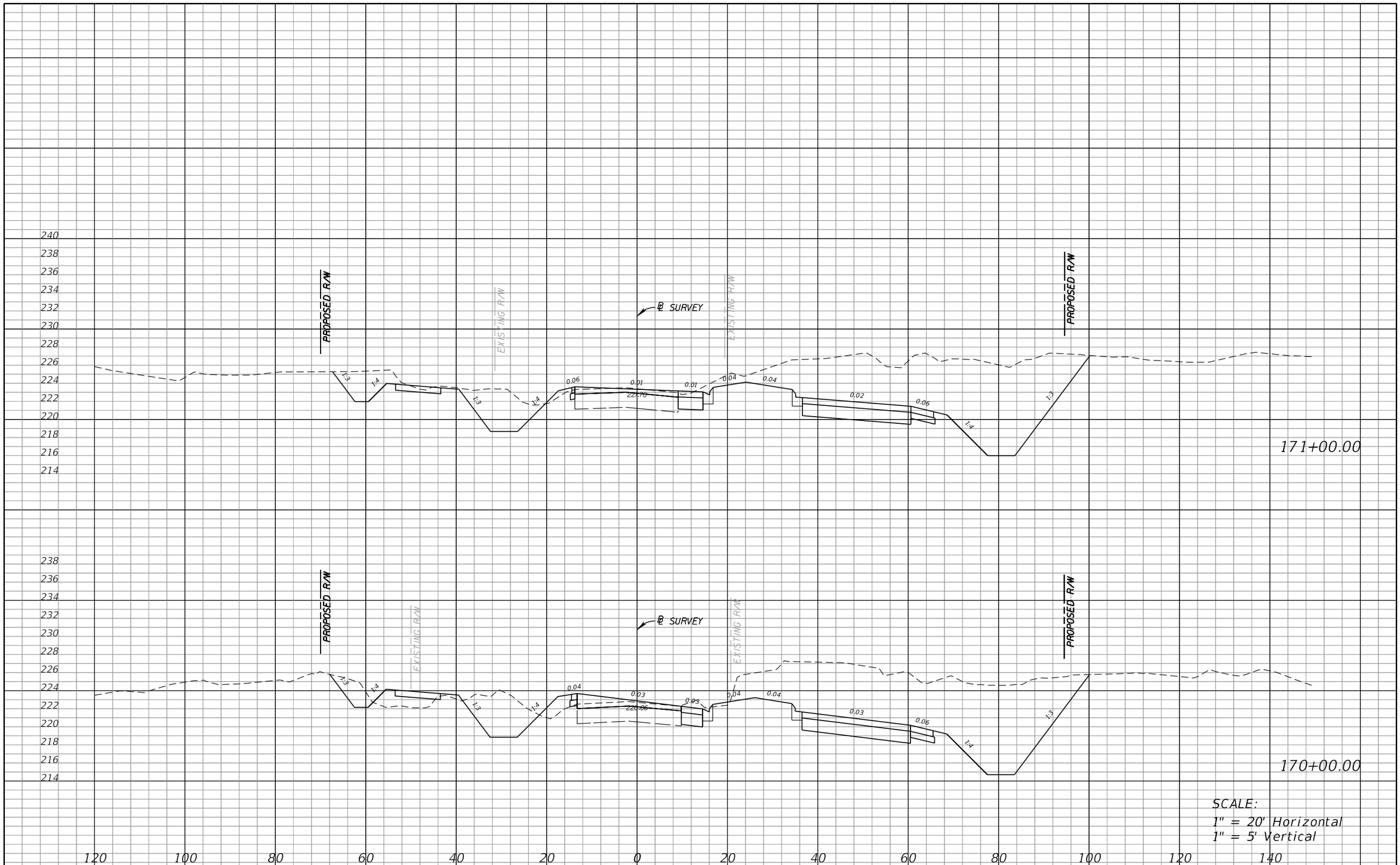

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2200
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

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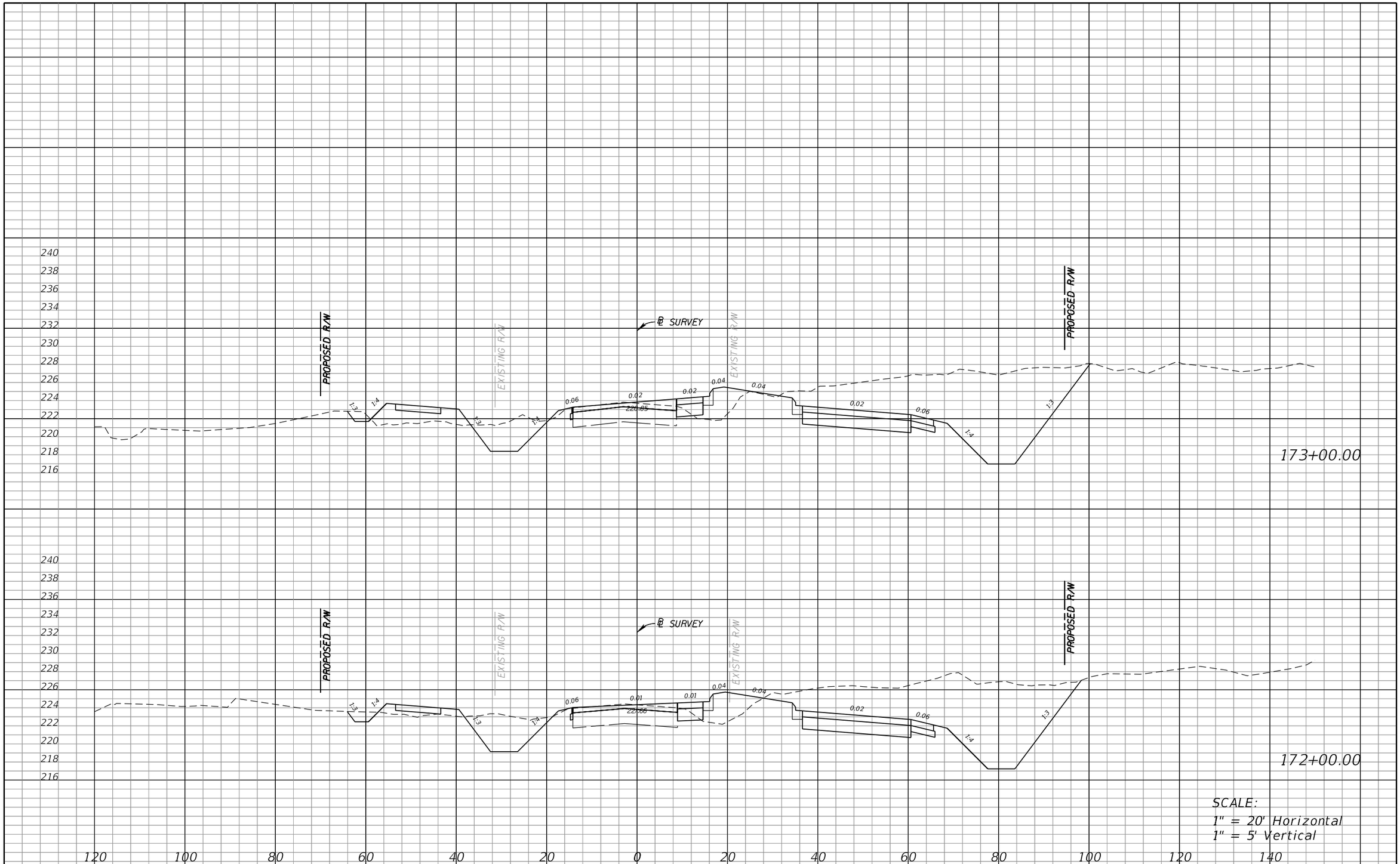

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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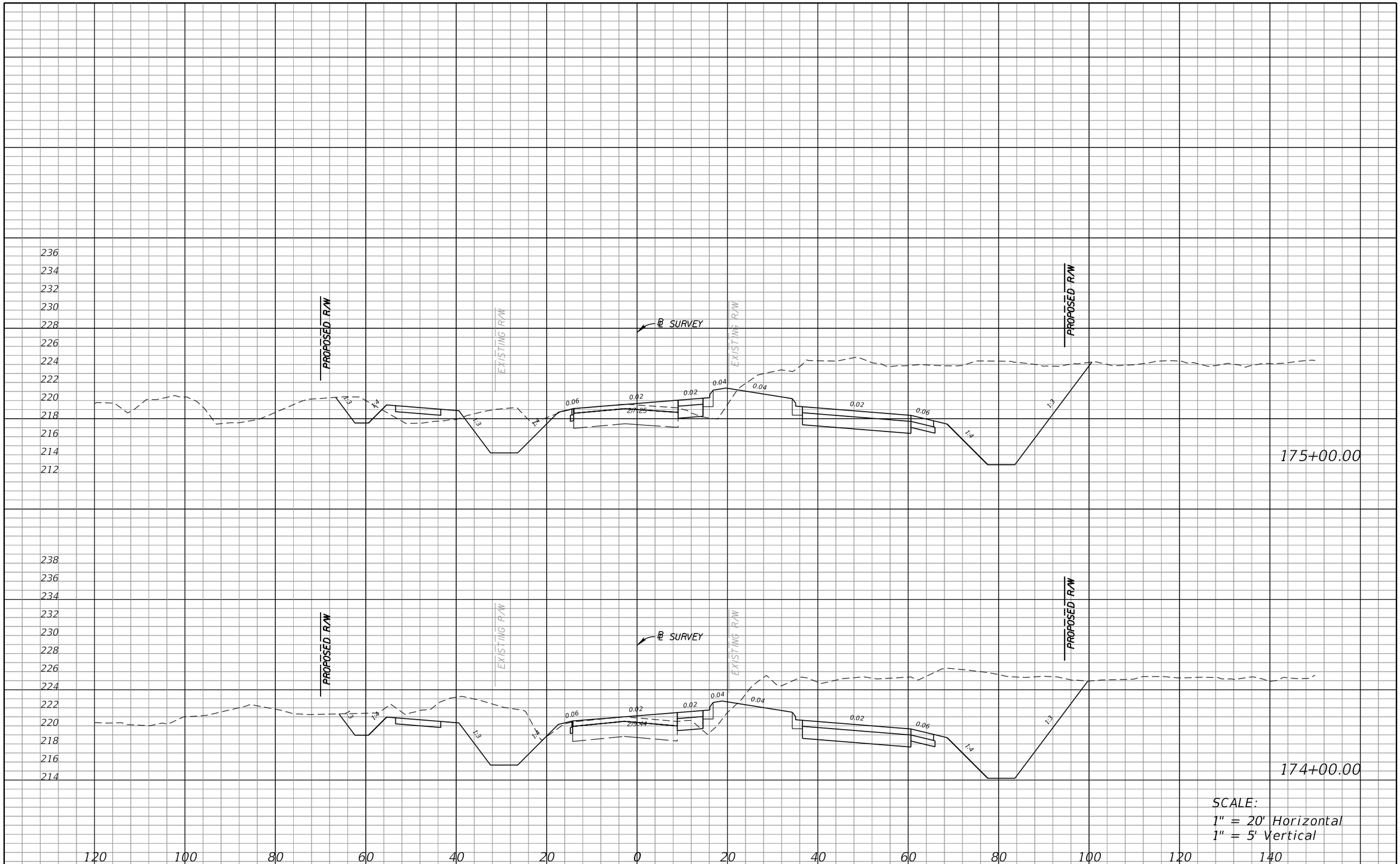

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-5736
813-282-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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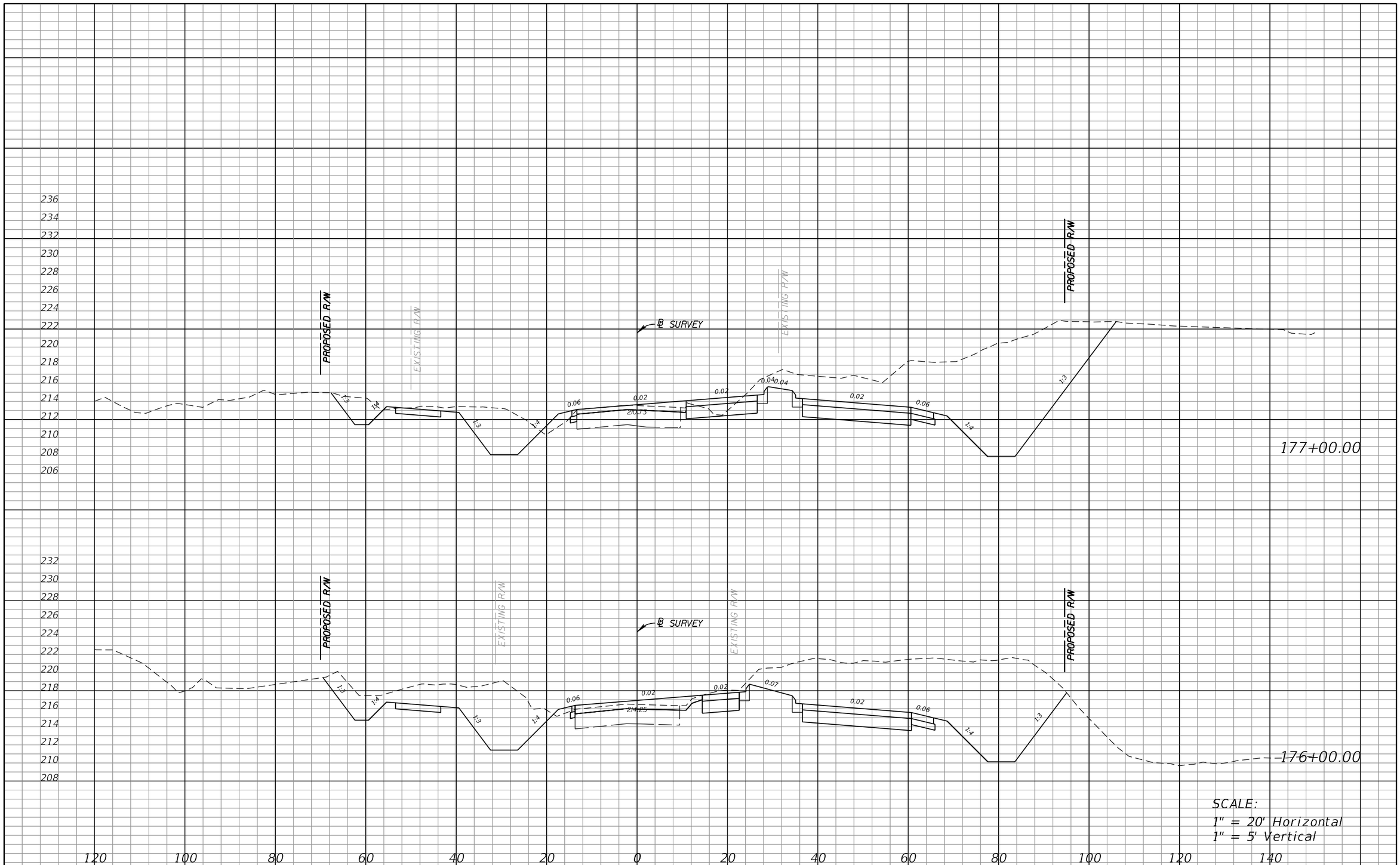

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

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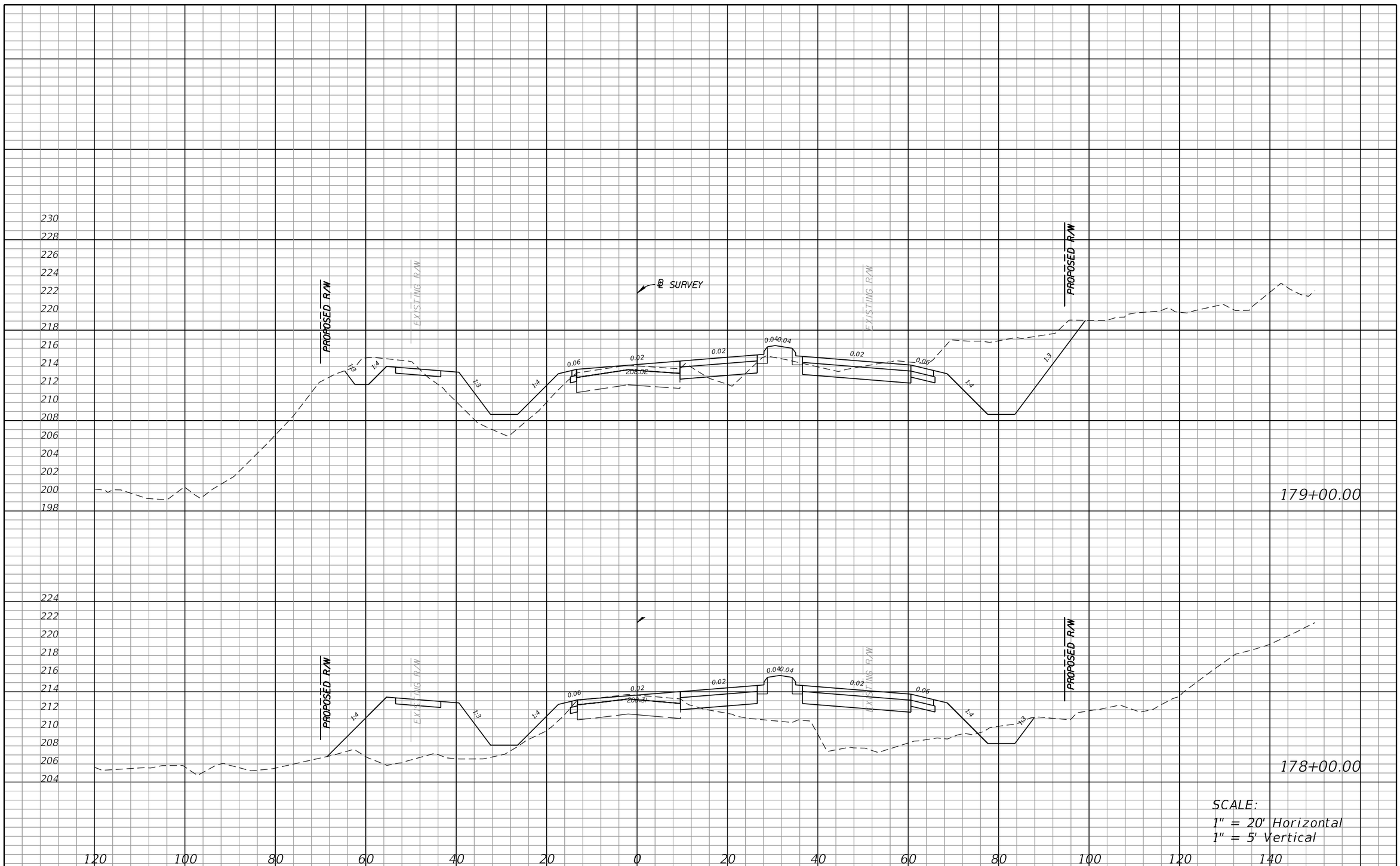

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-289-1990
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 125

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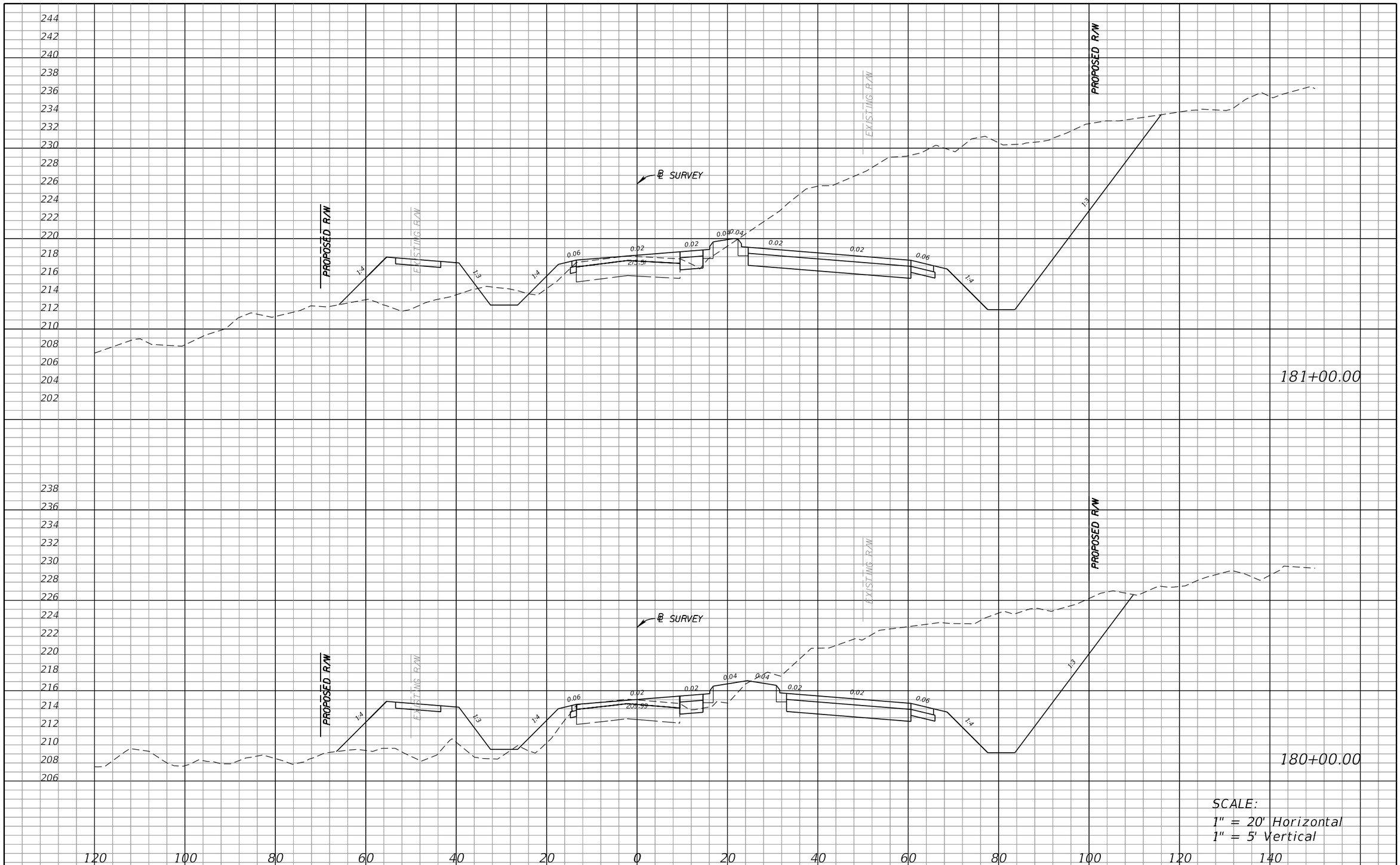

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-289-1990
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 126

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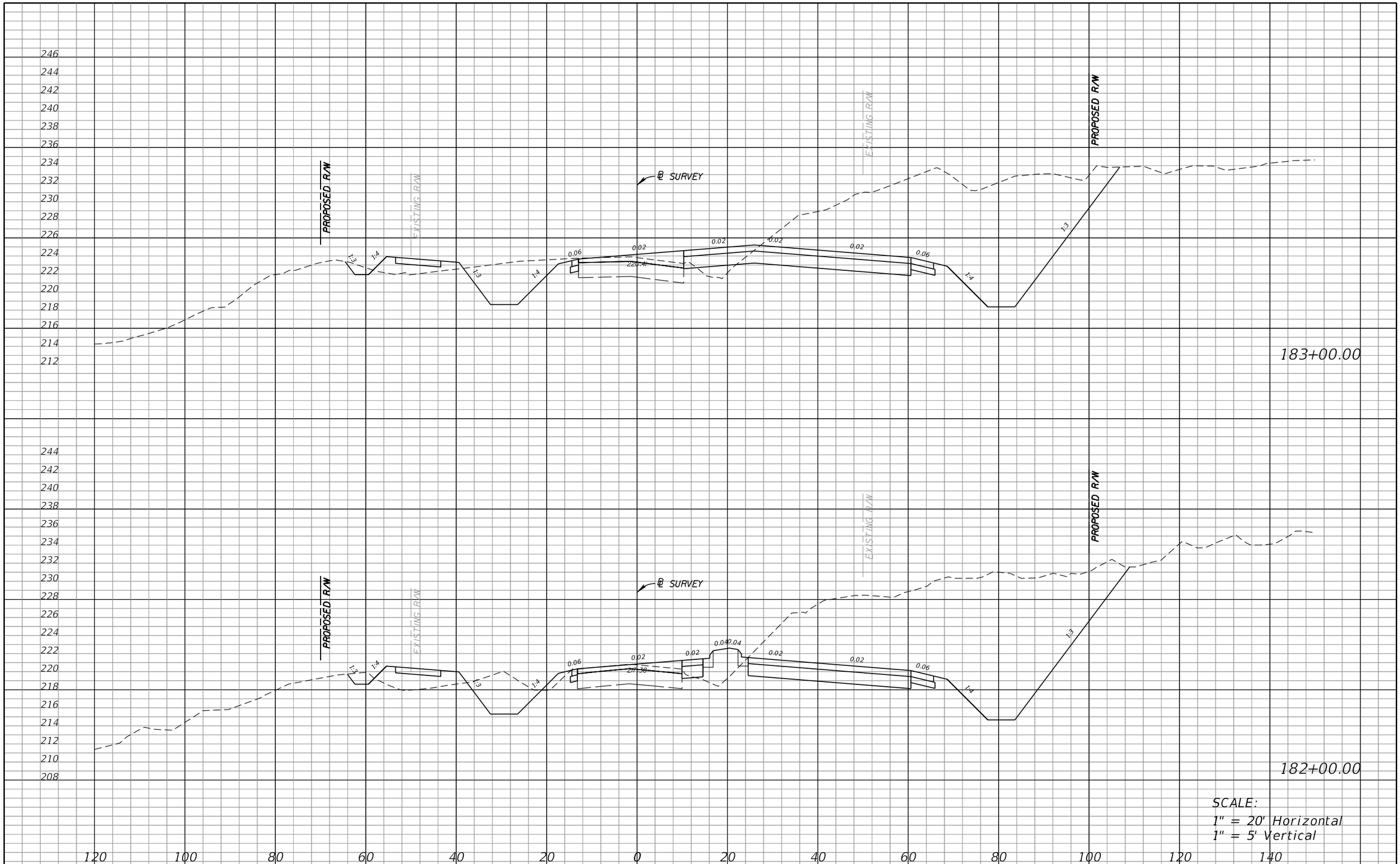

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-2325
813-282-2560
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 127

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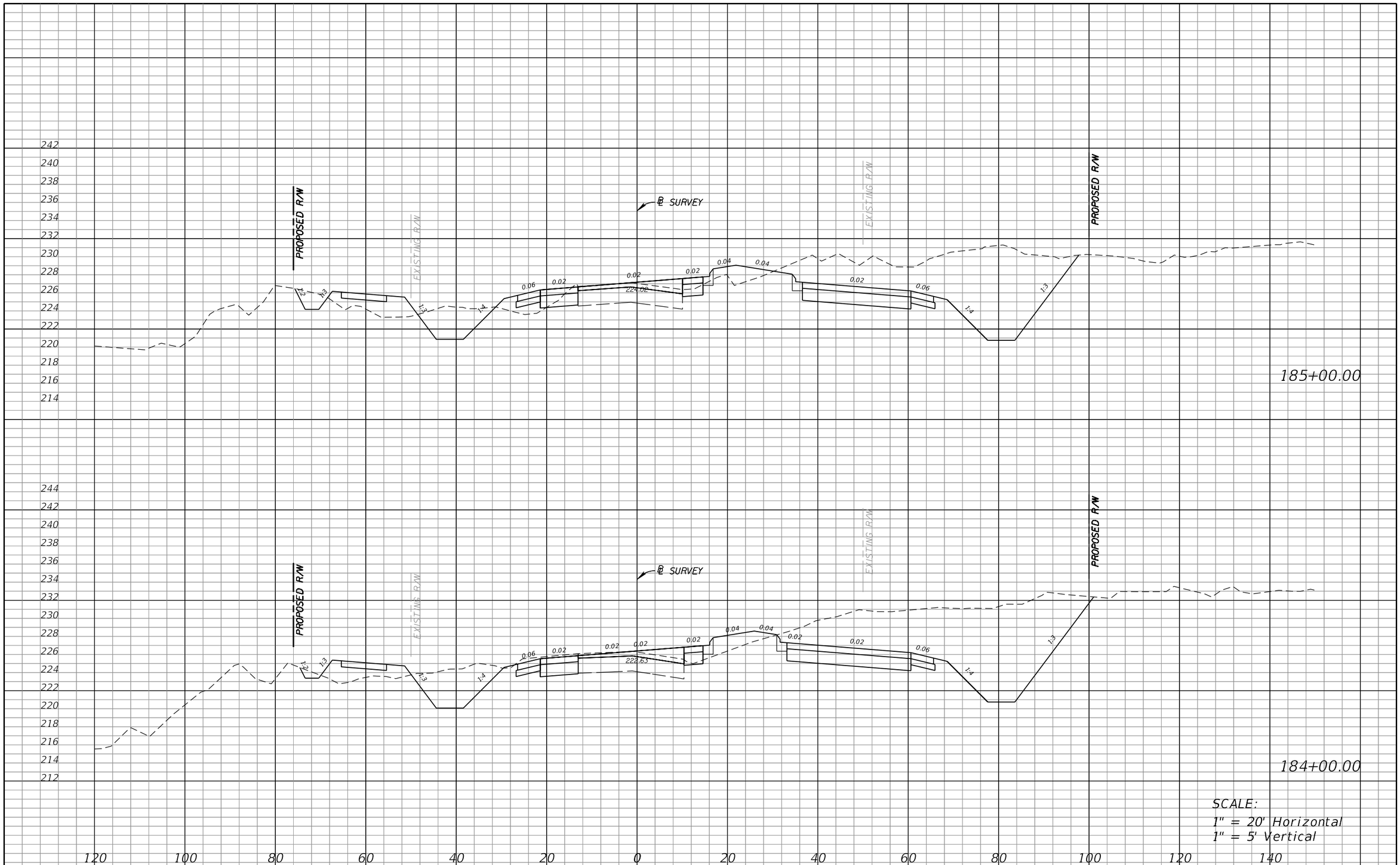

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 128

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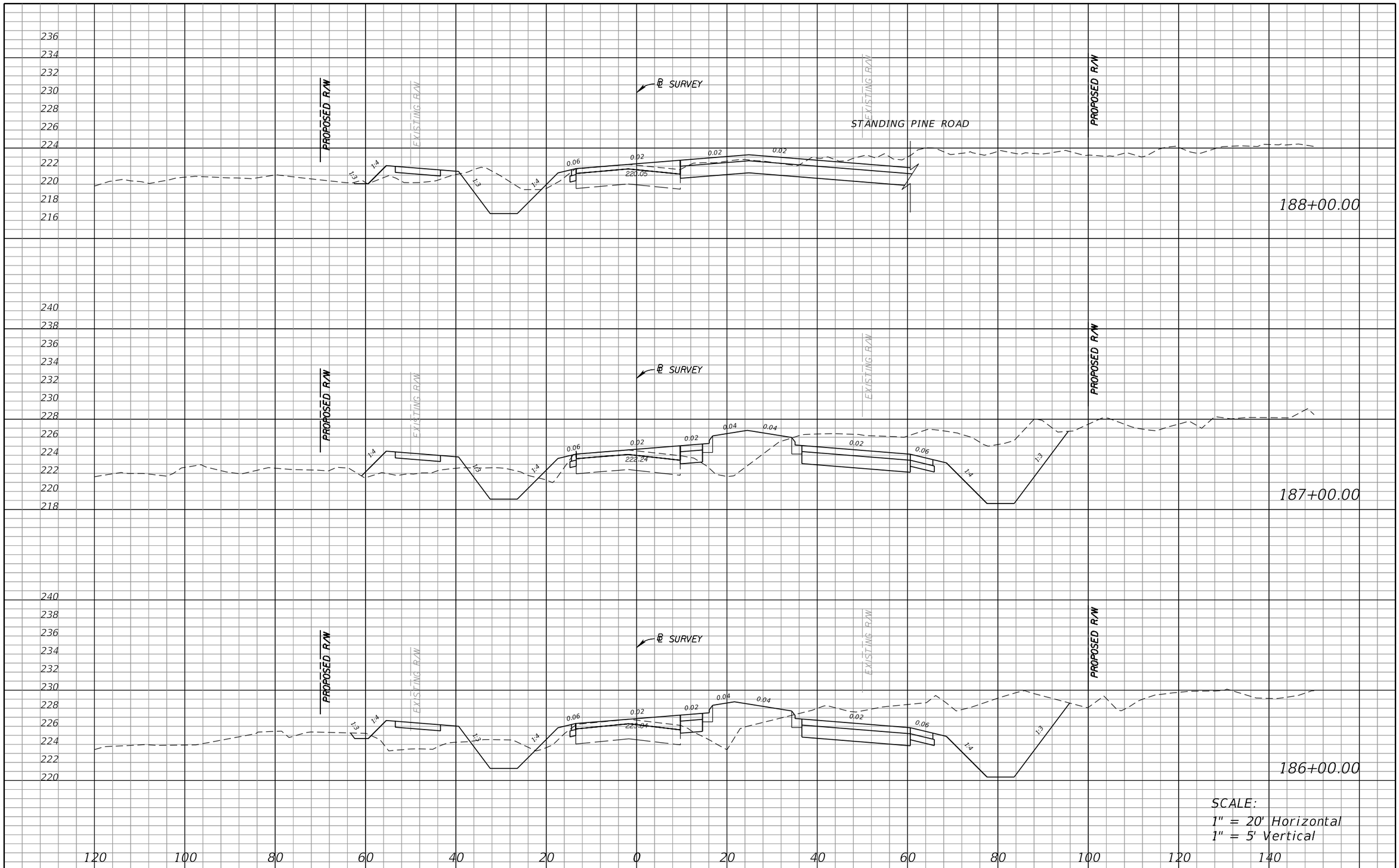

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 Commonwealth Boulevard, Suite 1500
Tallahassee, Florida 32303-7525
850-558-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 129

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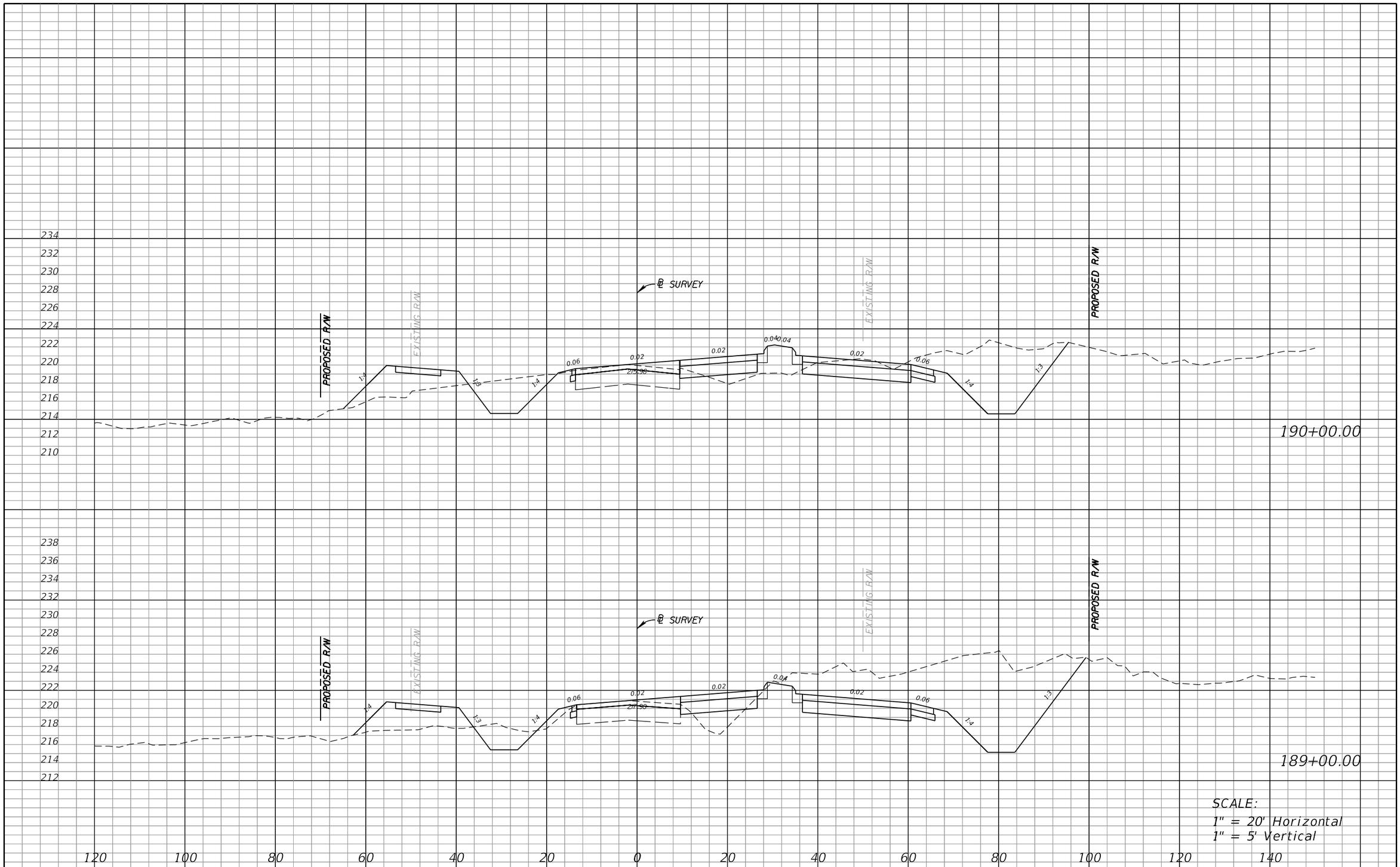

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
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Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 130

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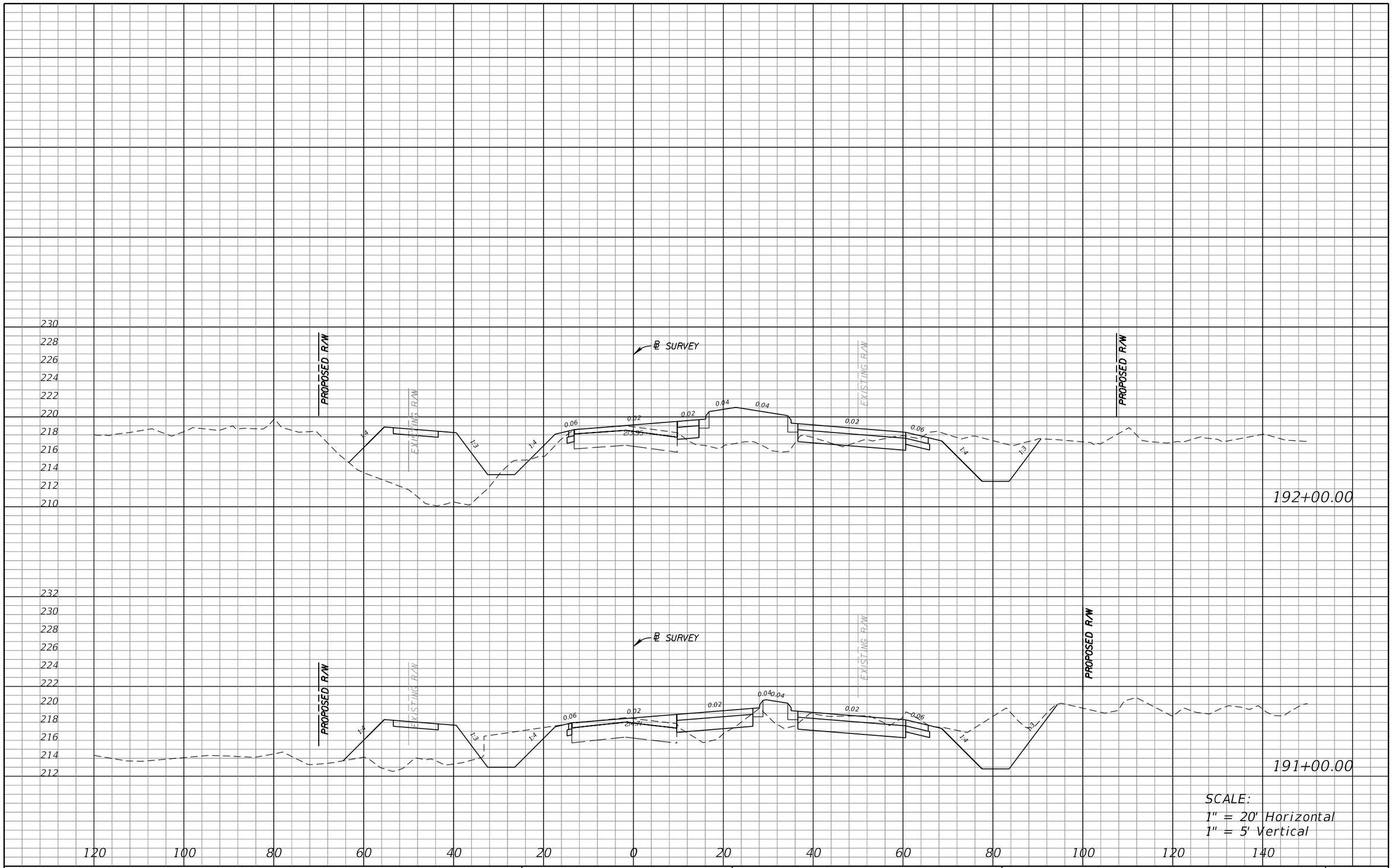

SCALE:
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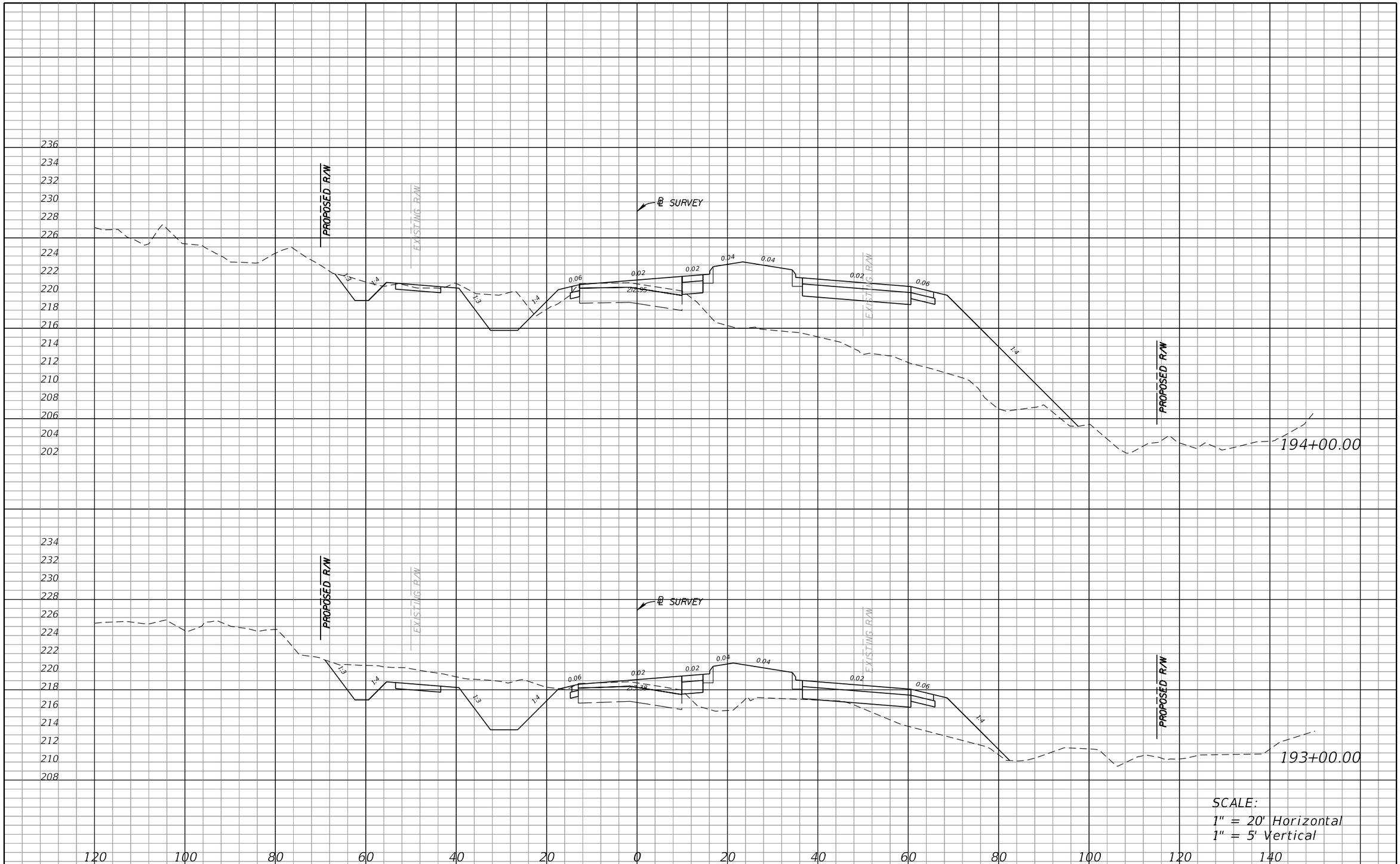
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 Metropolitan Boulevard, Suite 300
Tallahassee, Florida 32308
850-558-9500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 131



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 132

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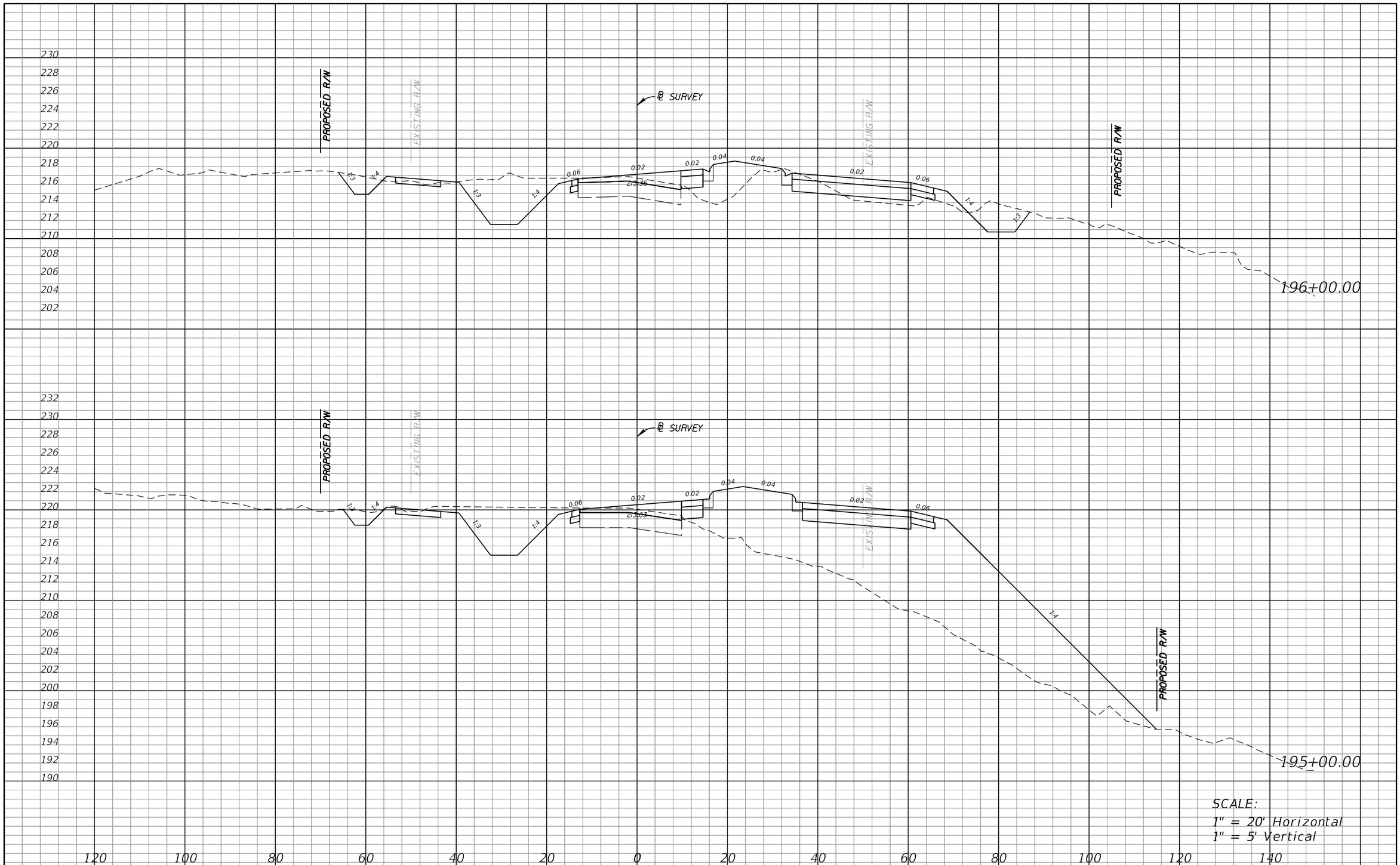

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2560
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 133

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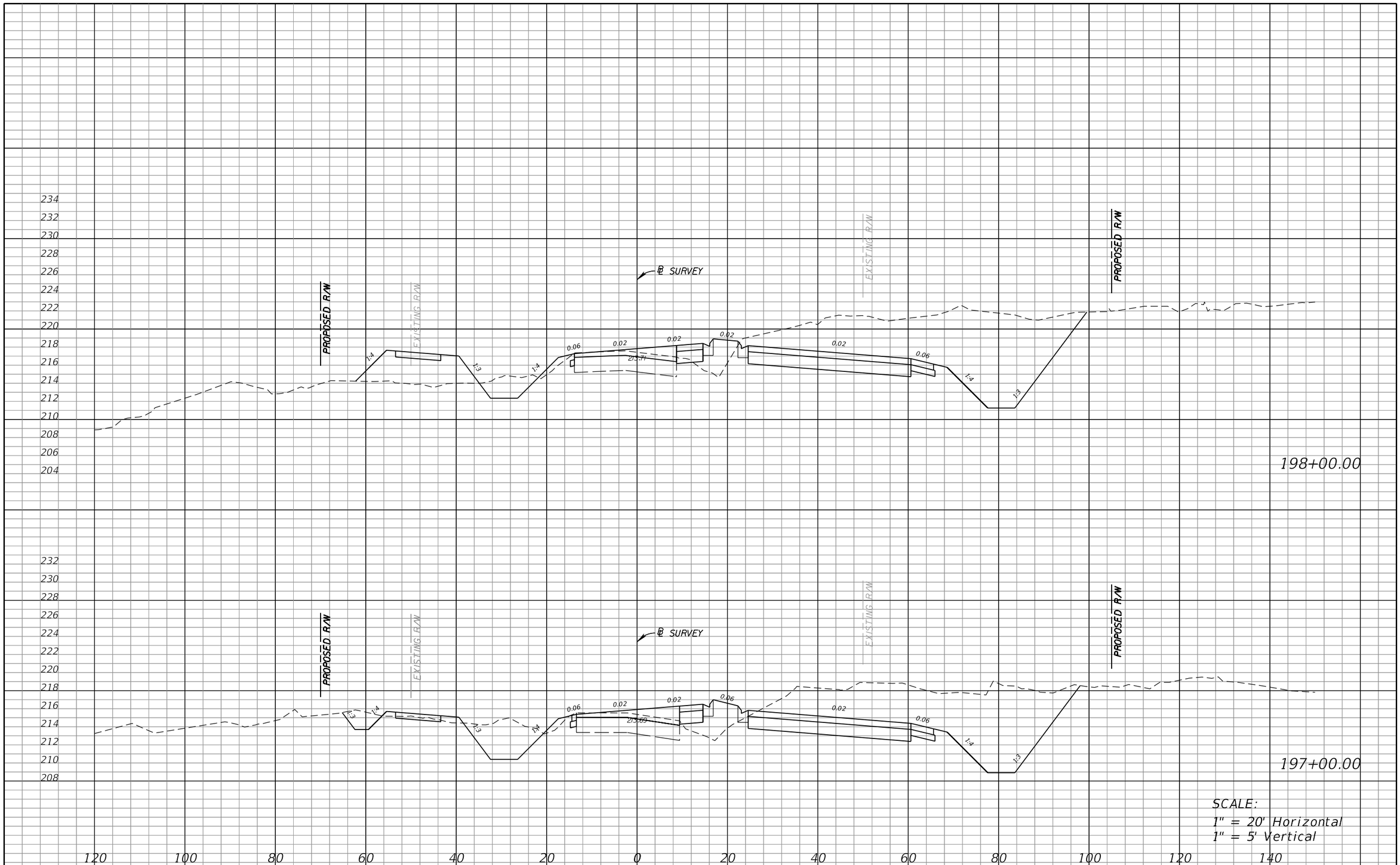

SCALE:
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1" = 5' Vertical

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-282-2500
Certificate of Authorization No. 5620
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 • FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 134

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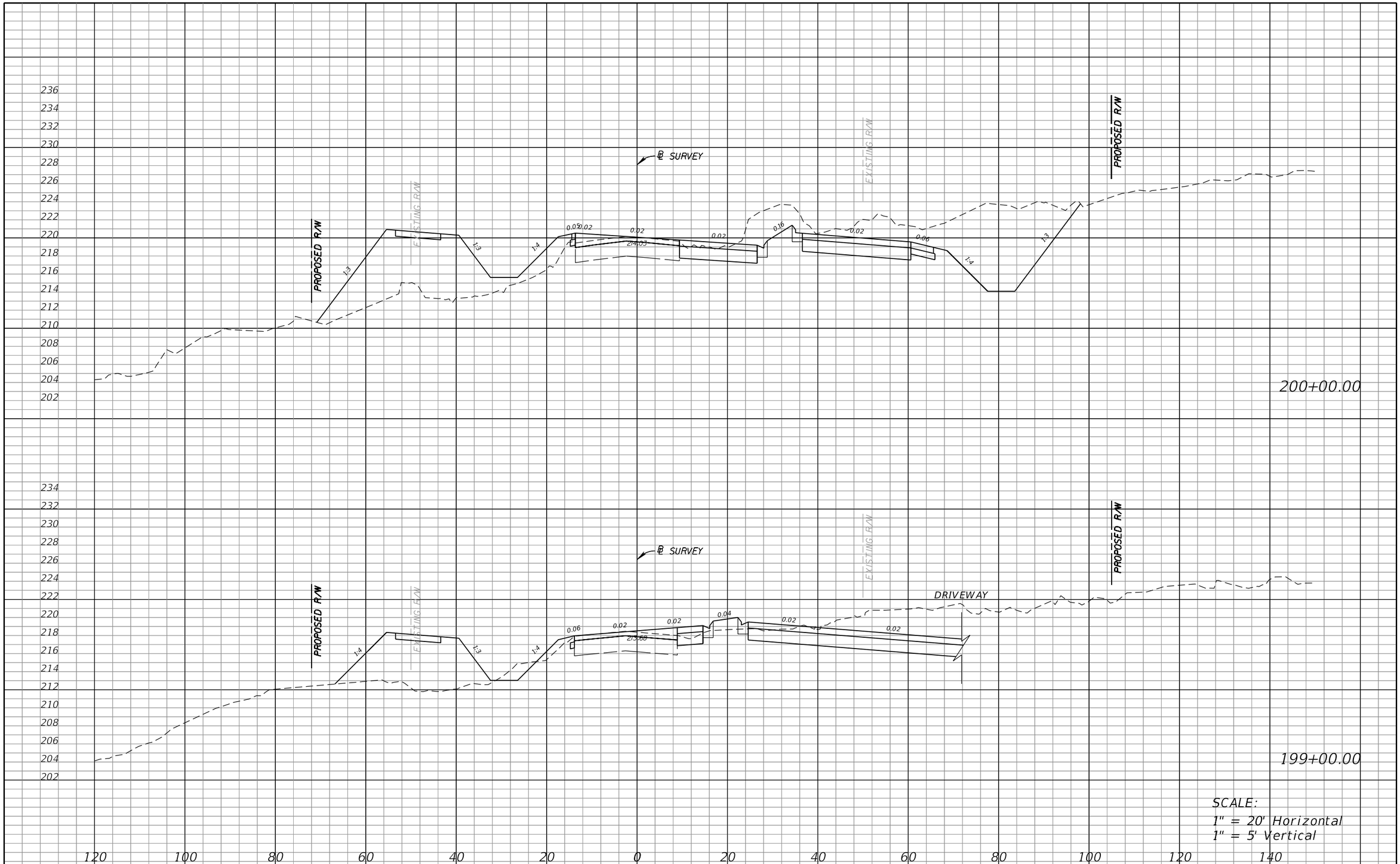

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 135

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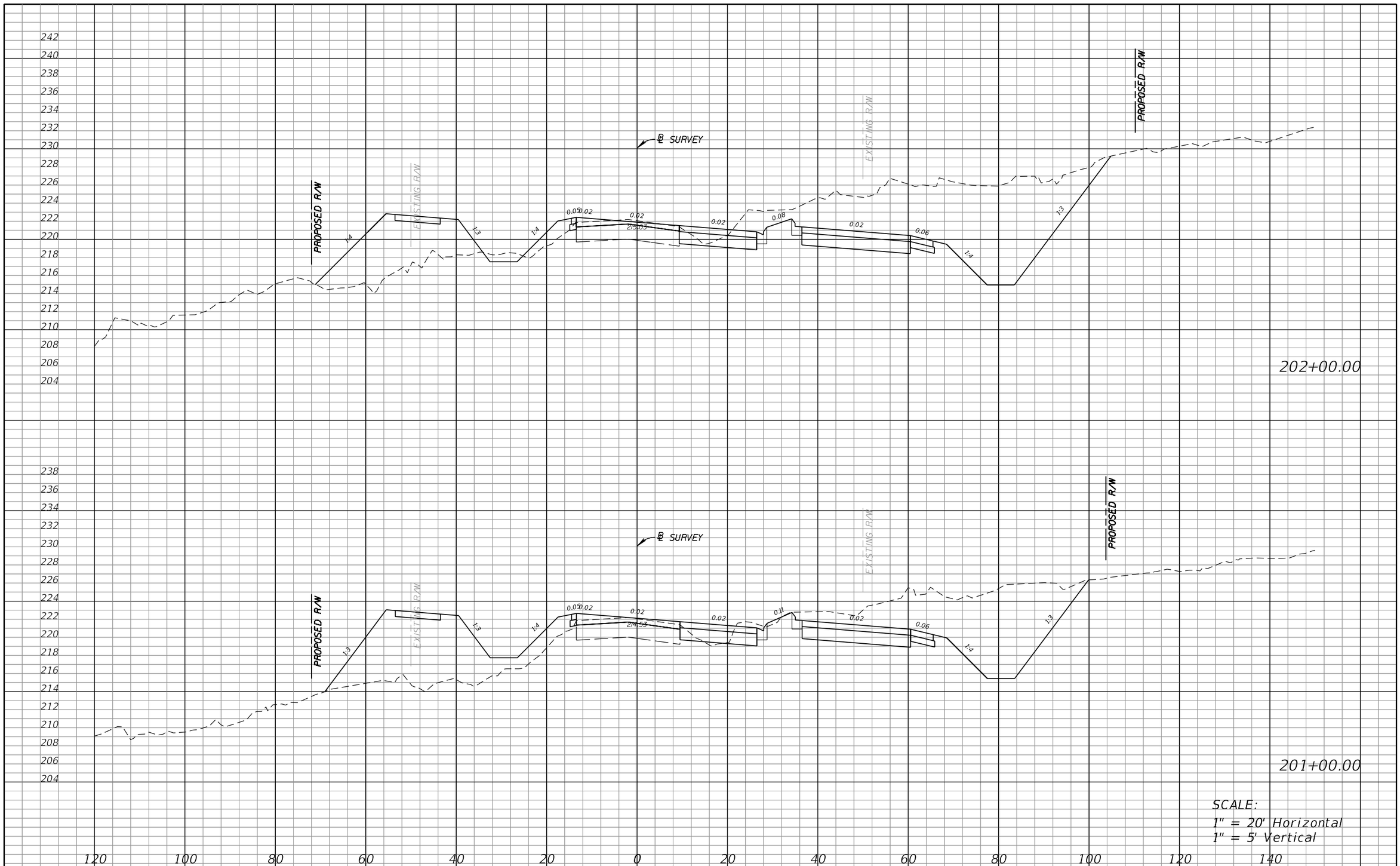

SCALE:
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 136

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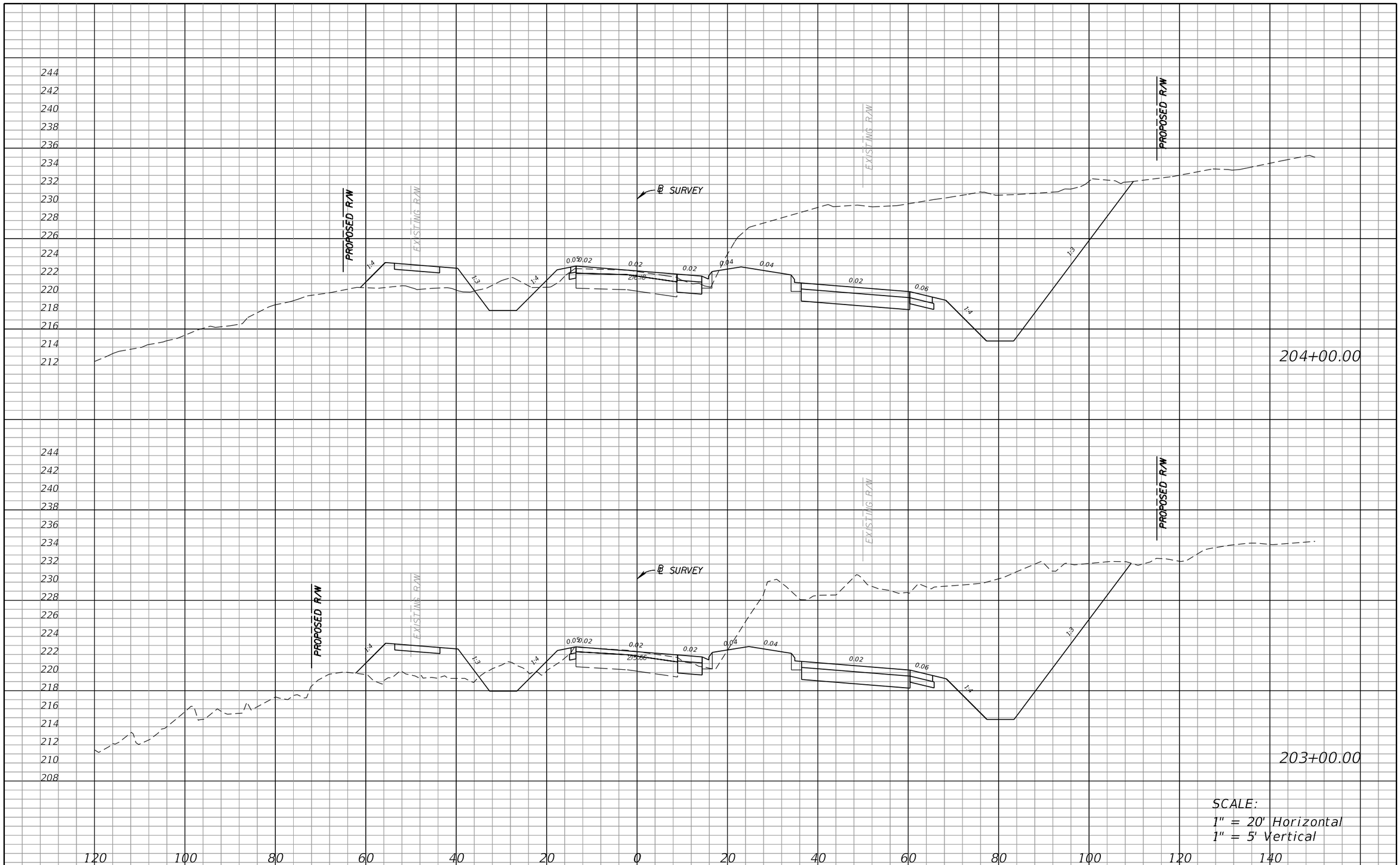

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

CROSS SECTIONS

SHEET NO. 137

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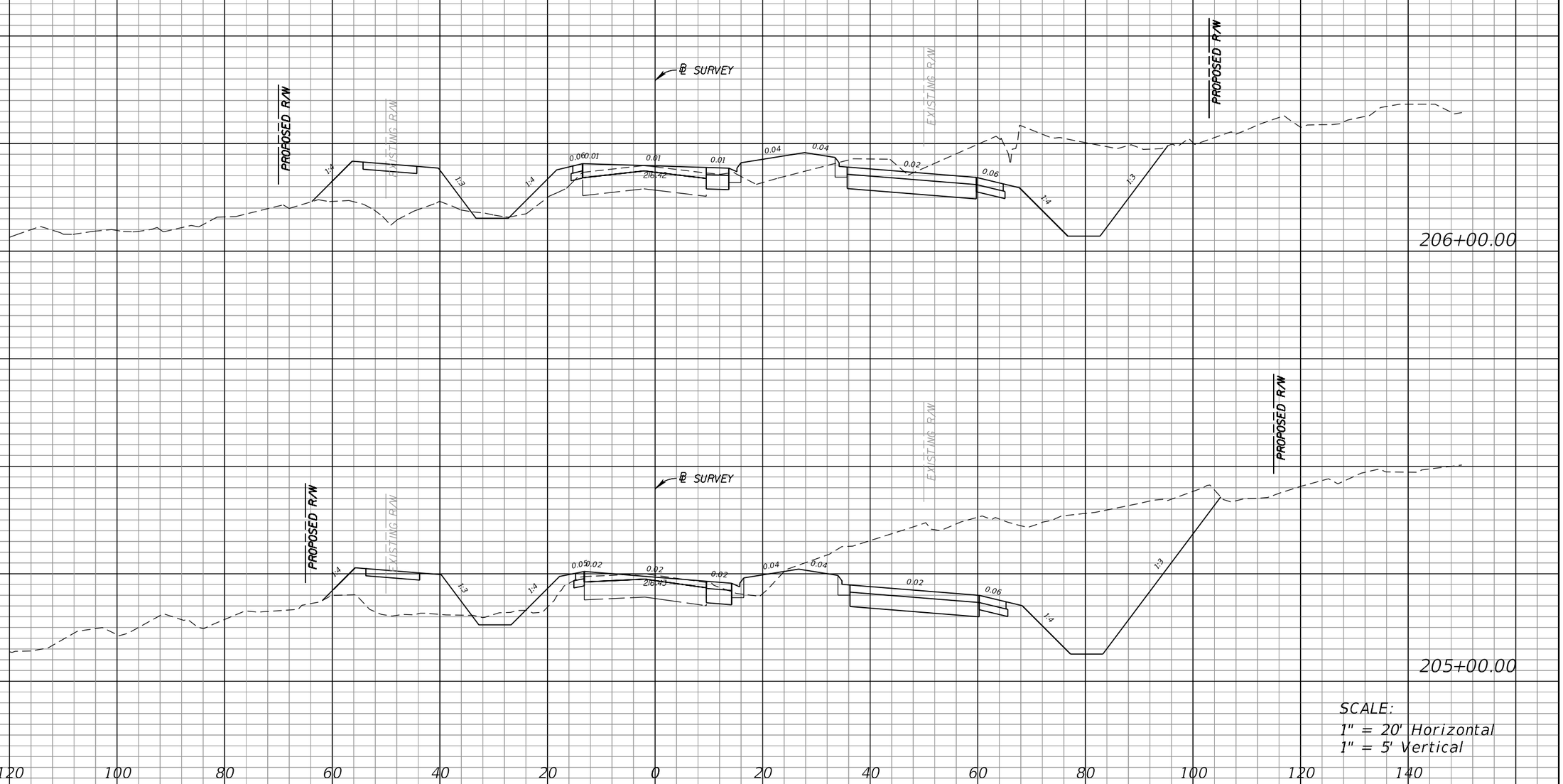

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-1825
813-289-1990
Certificate of Authorization No. 5620
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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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SHEET NO. 138

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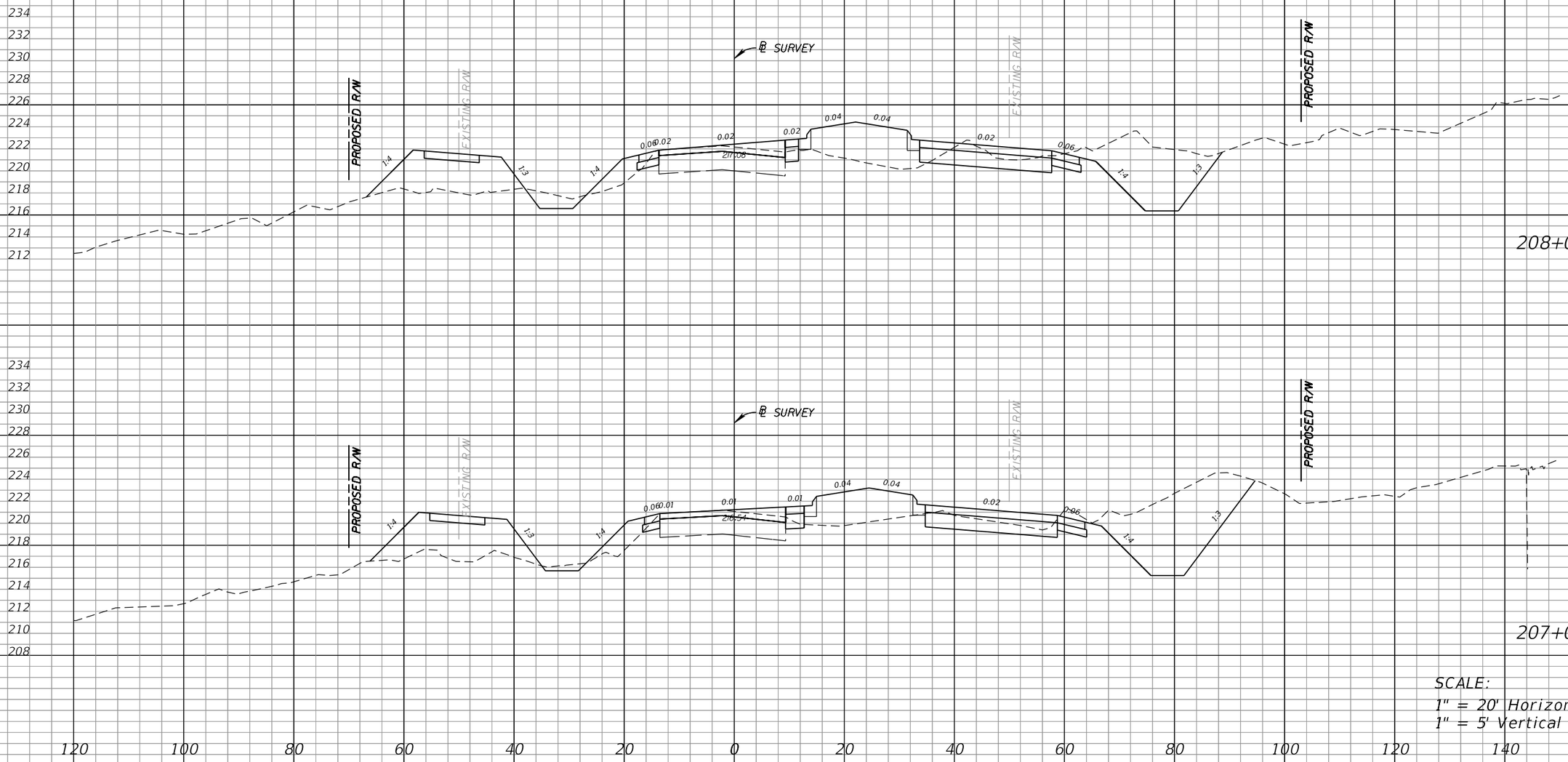

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-2325
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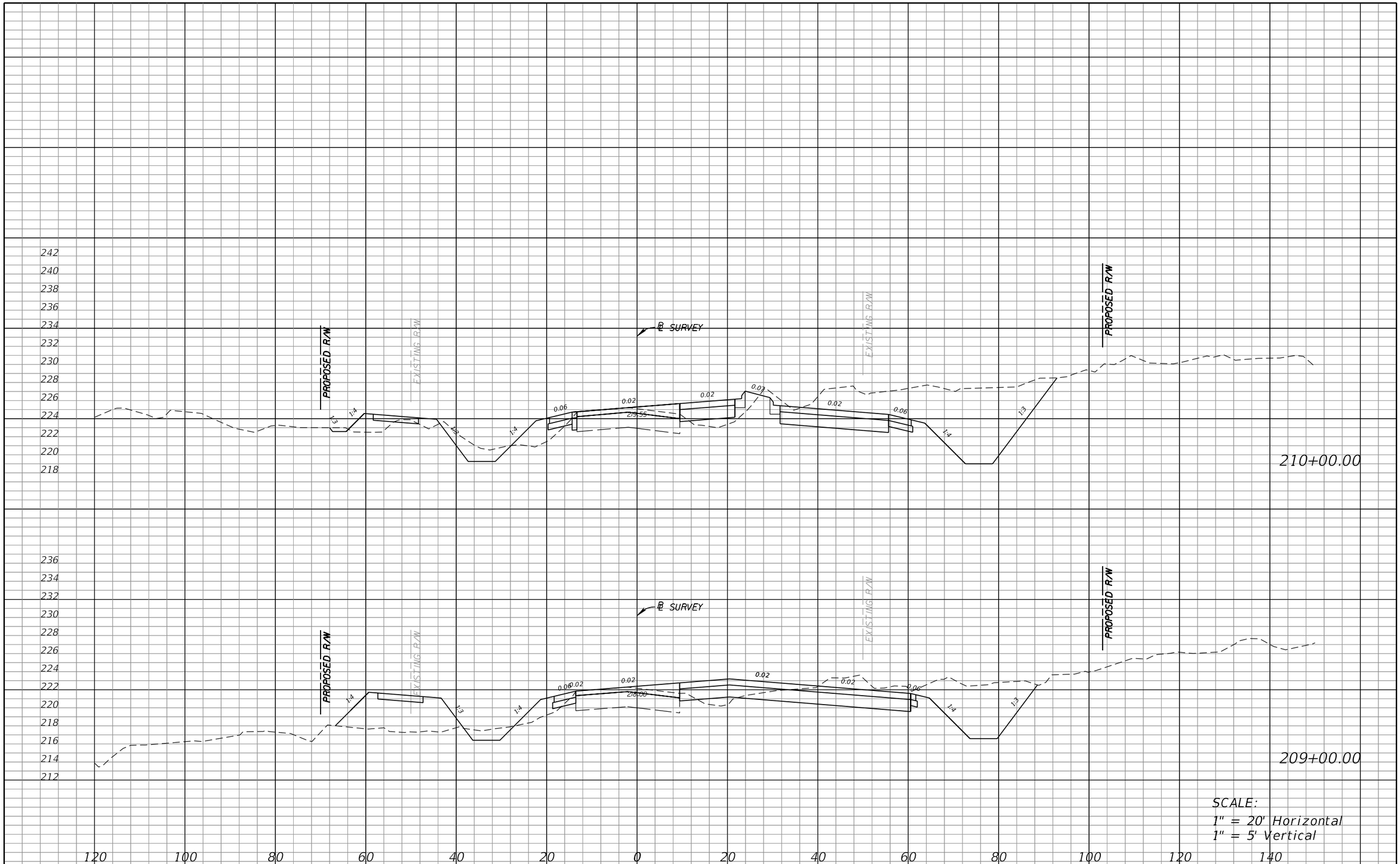
SHEET NO. 139



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SHEET NO. 140

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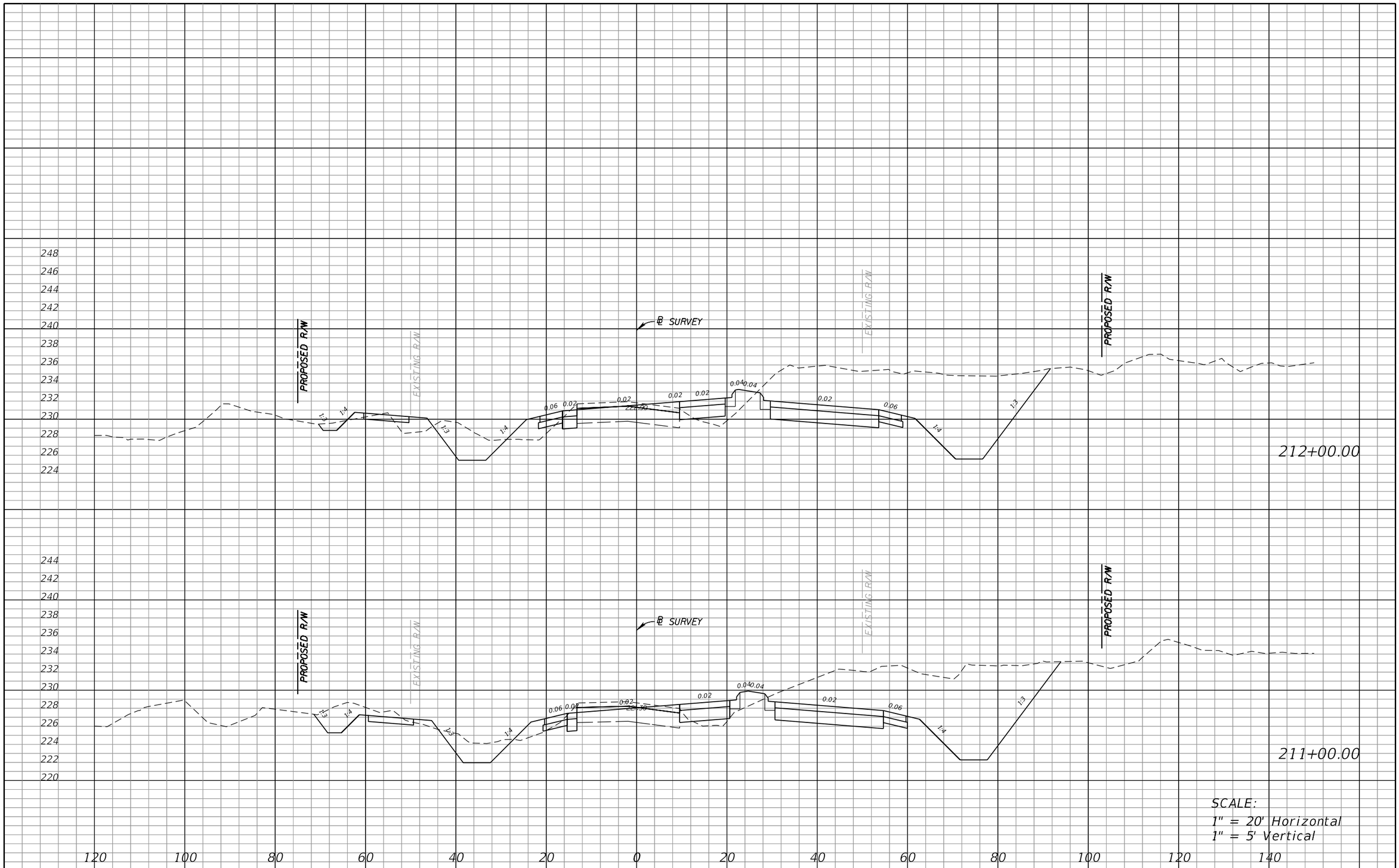

REVISIONS			
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1715 Commonwealth Boulevard, Suite 1500
Tallahassee, Florida 32303-7525
850-558-2560
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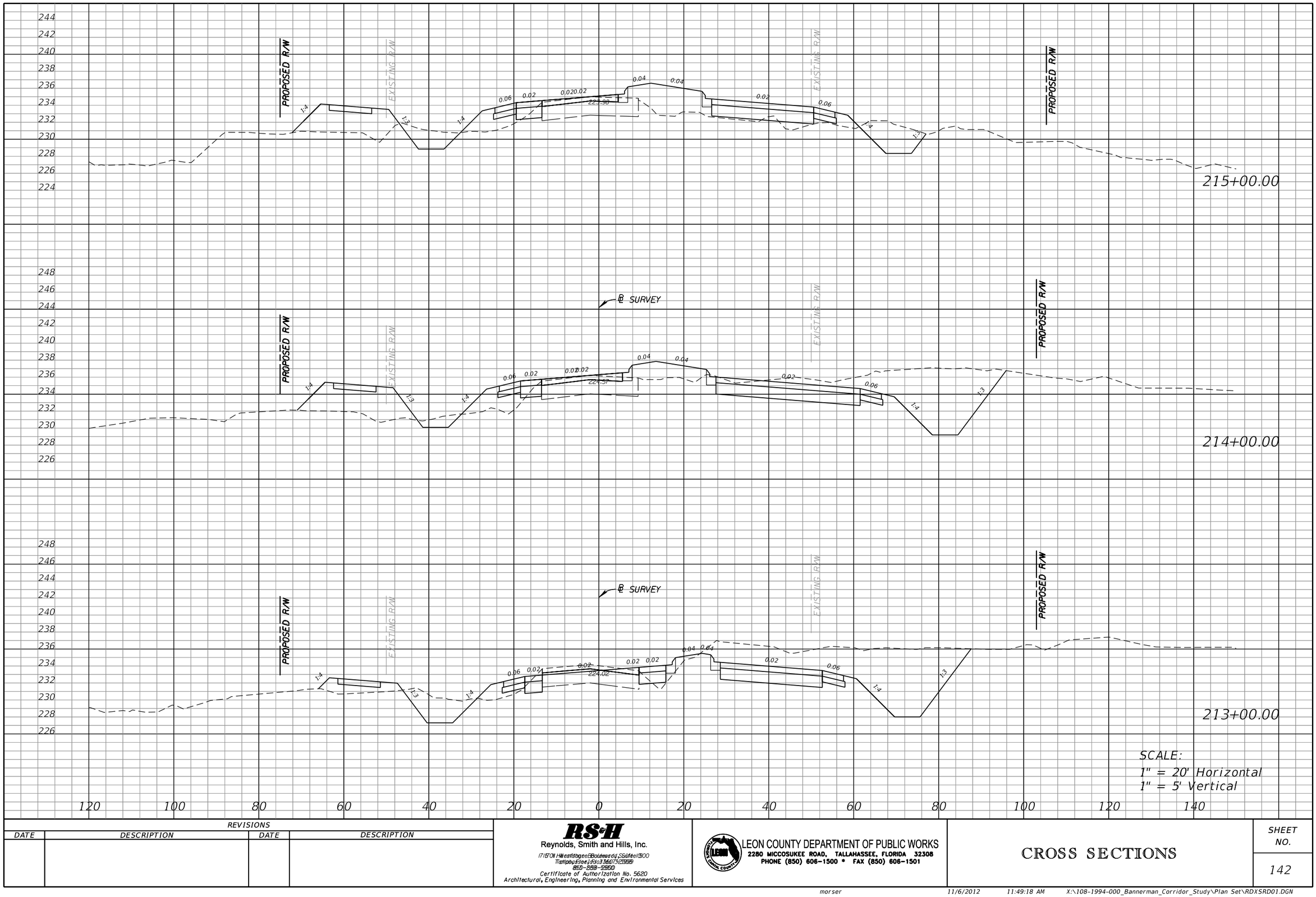

REVISIONS			
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SHEET NO. 142

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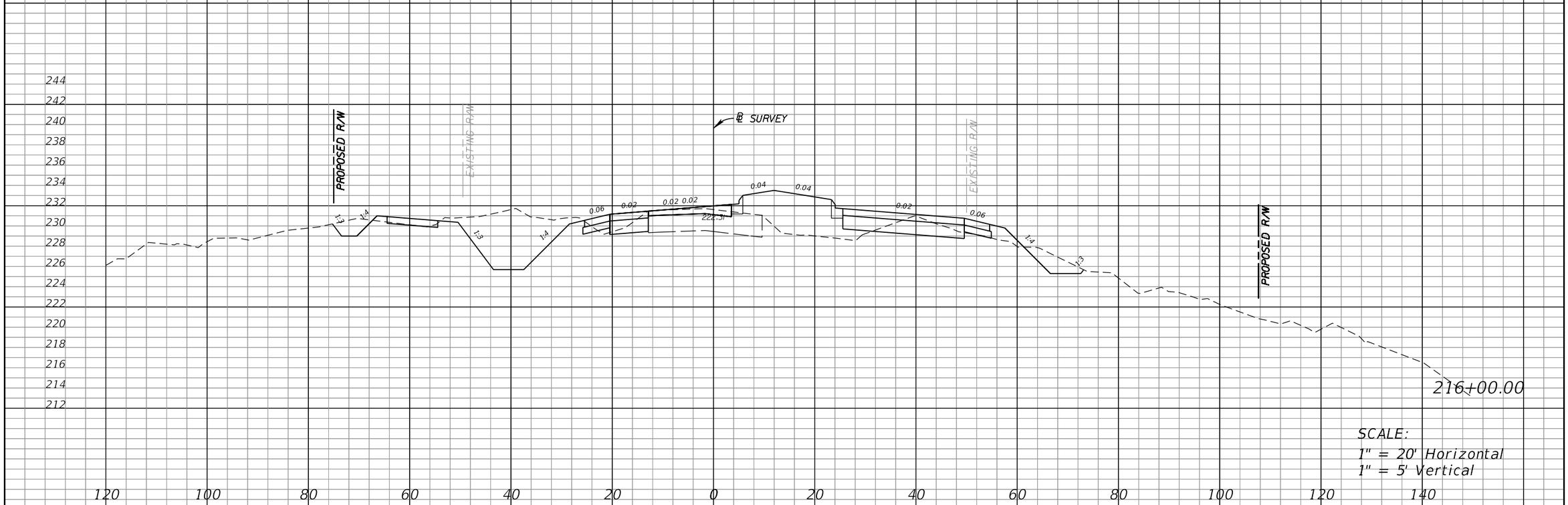

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
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SHEET NO. 143

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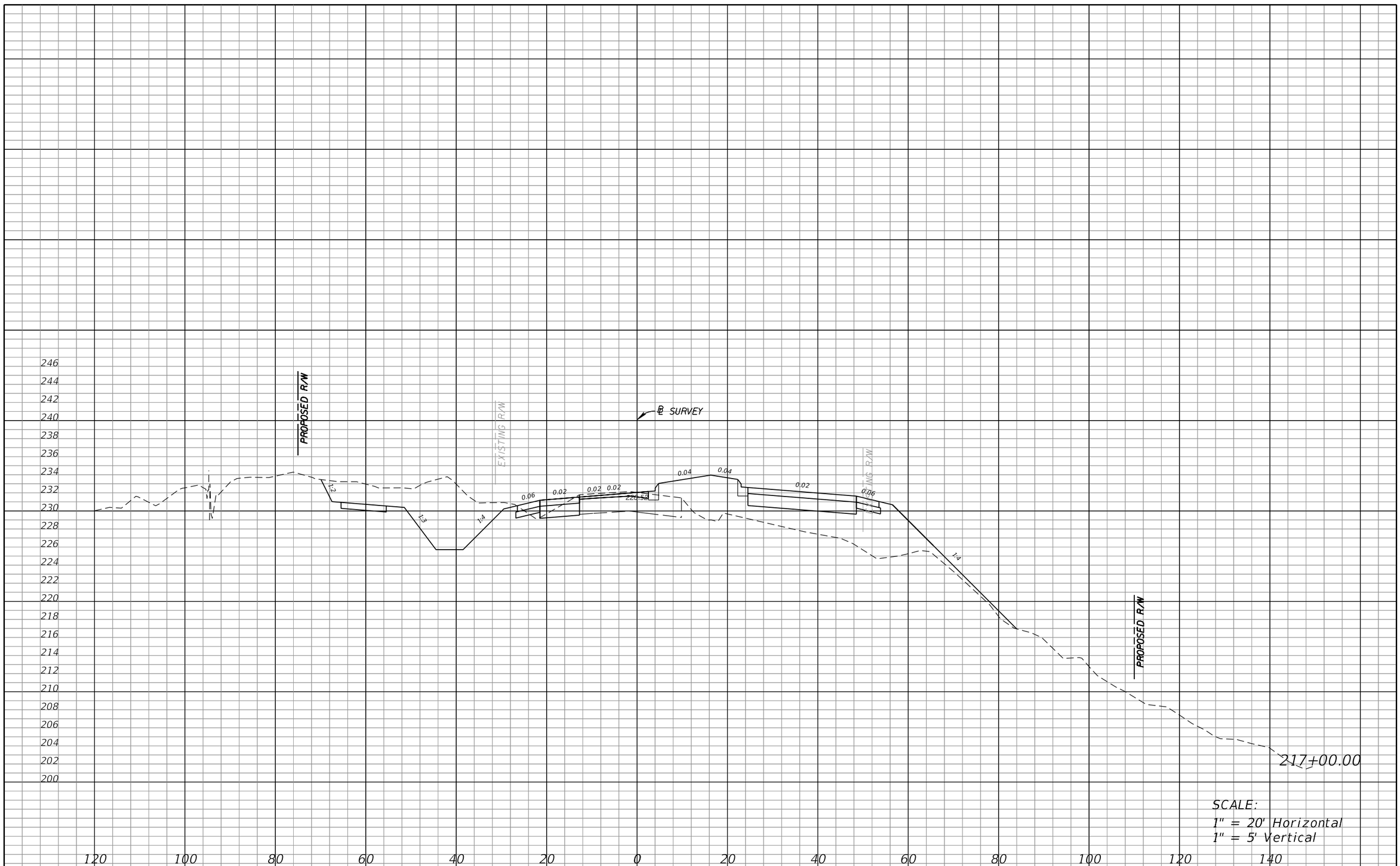

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
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SHEET NO. 144

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REVISIONS			
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SHEET NO. 145

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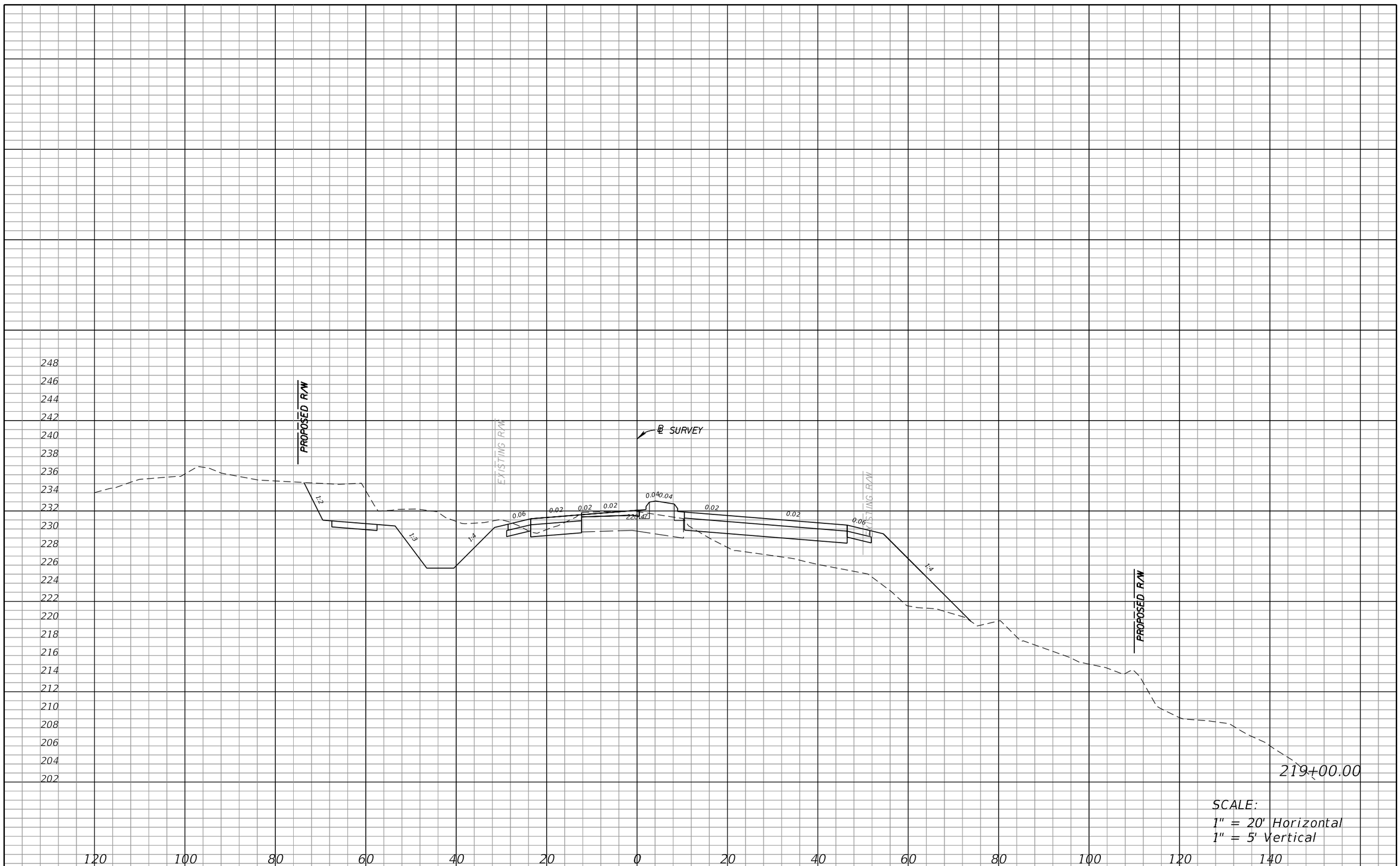

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
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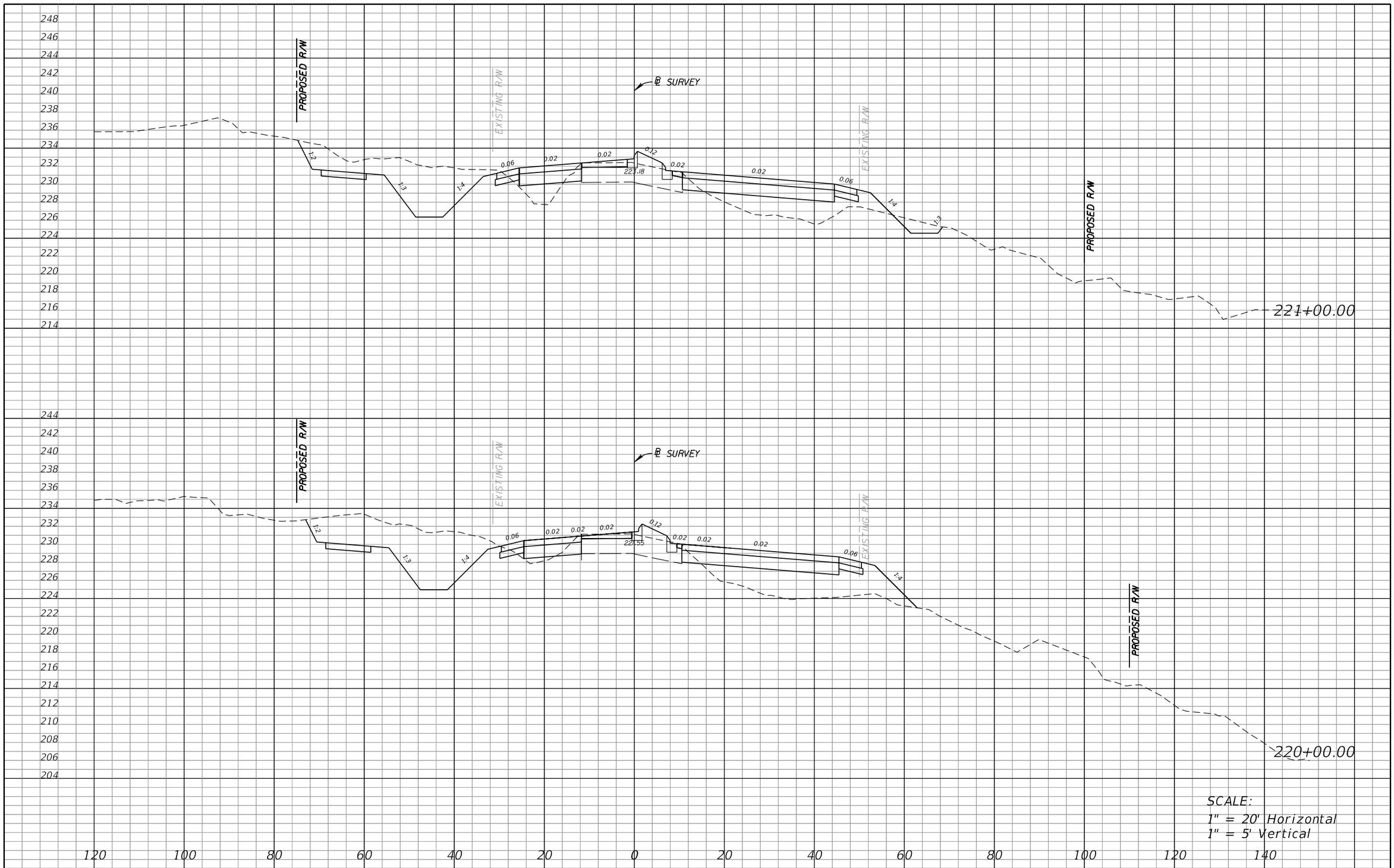

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
Tampa, Florida 33607-5736
813-282-2565
Certificate of Authorization No. 5620
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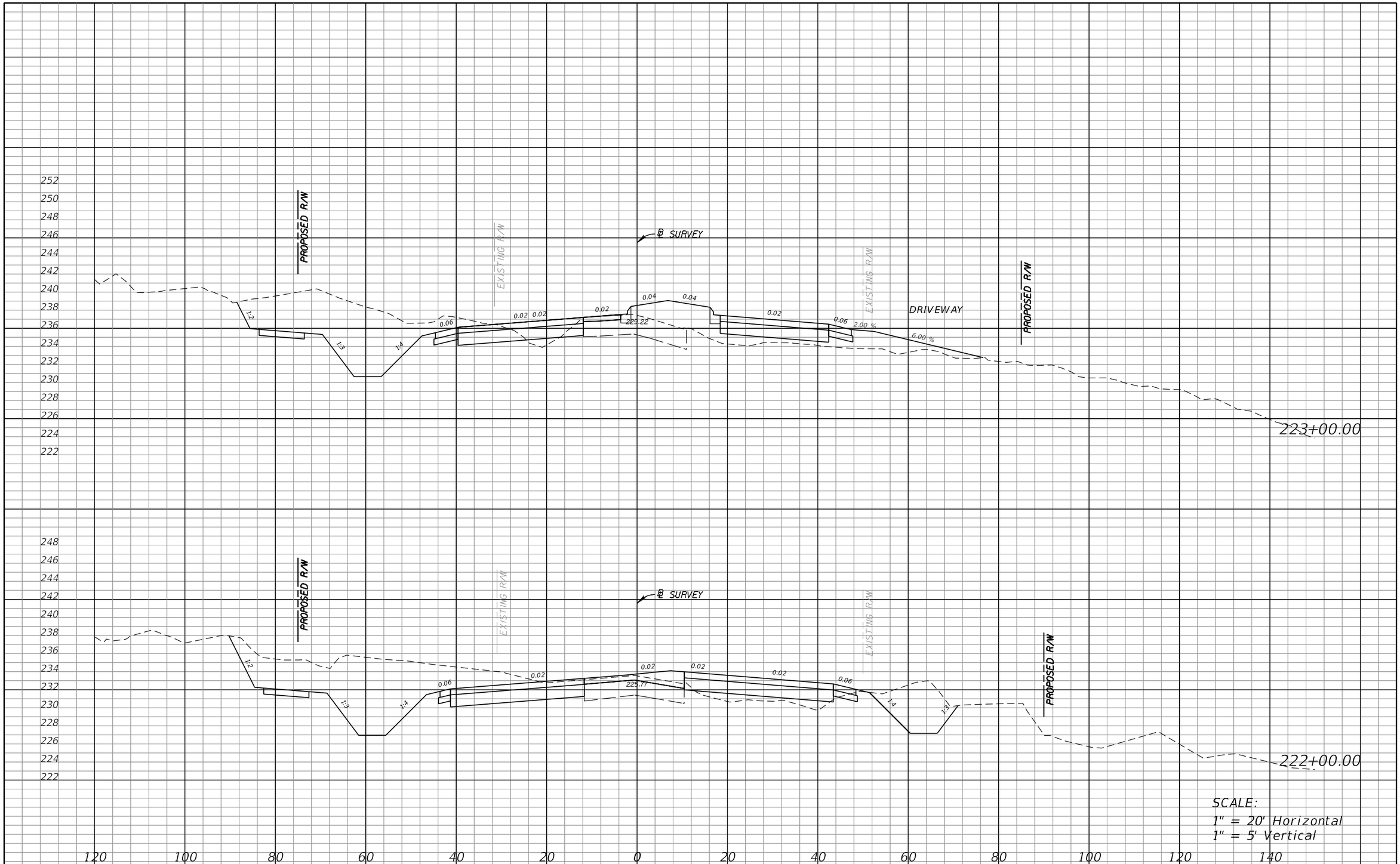

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS•H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-7525
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SHEET NO. 148

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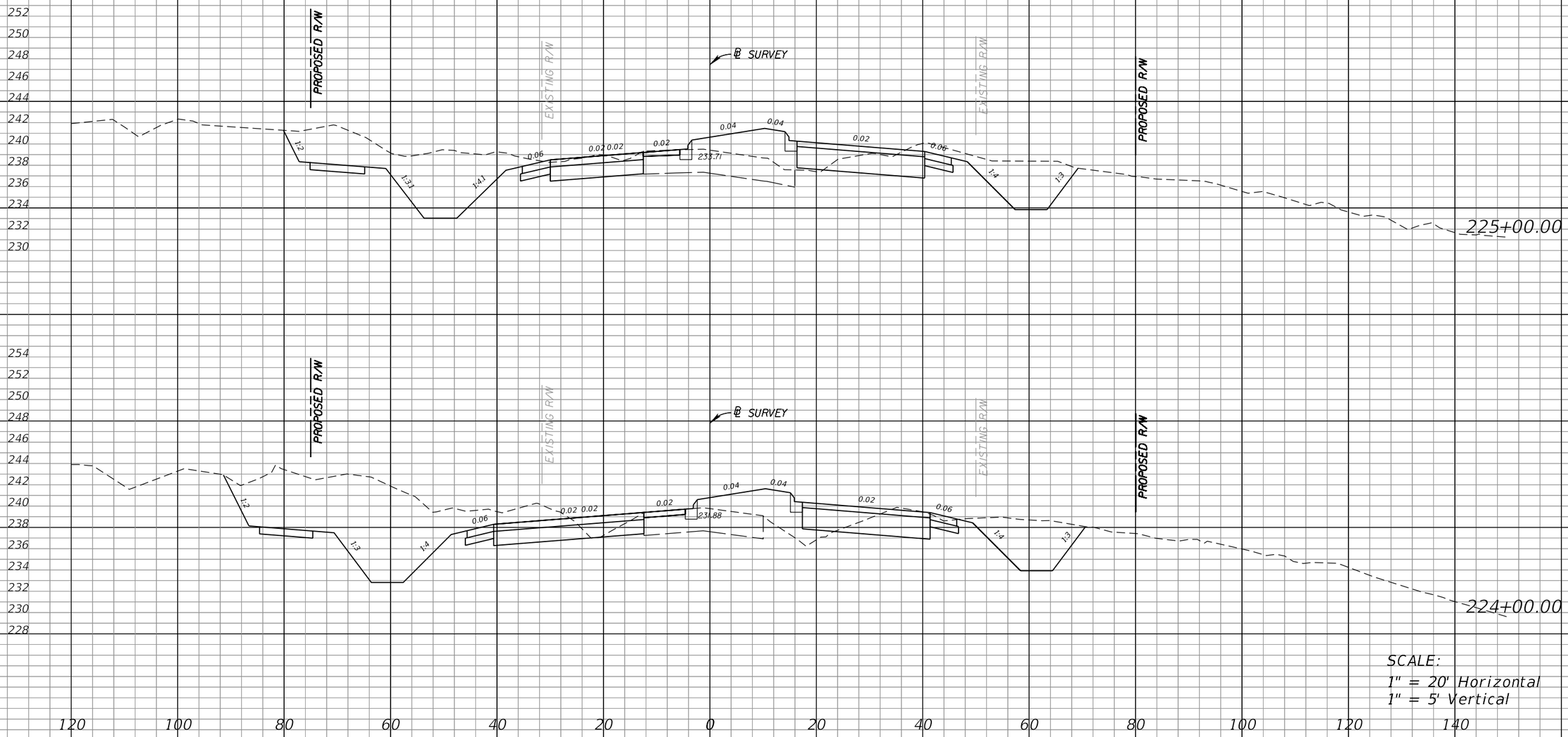

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 900
Tampa, Florida 33607-2325
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SHEET NO. 149

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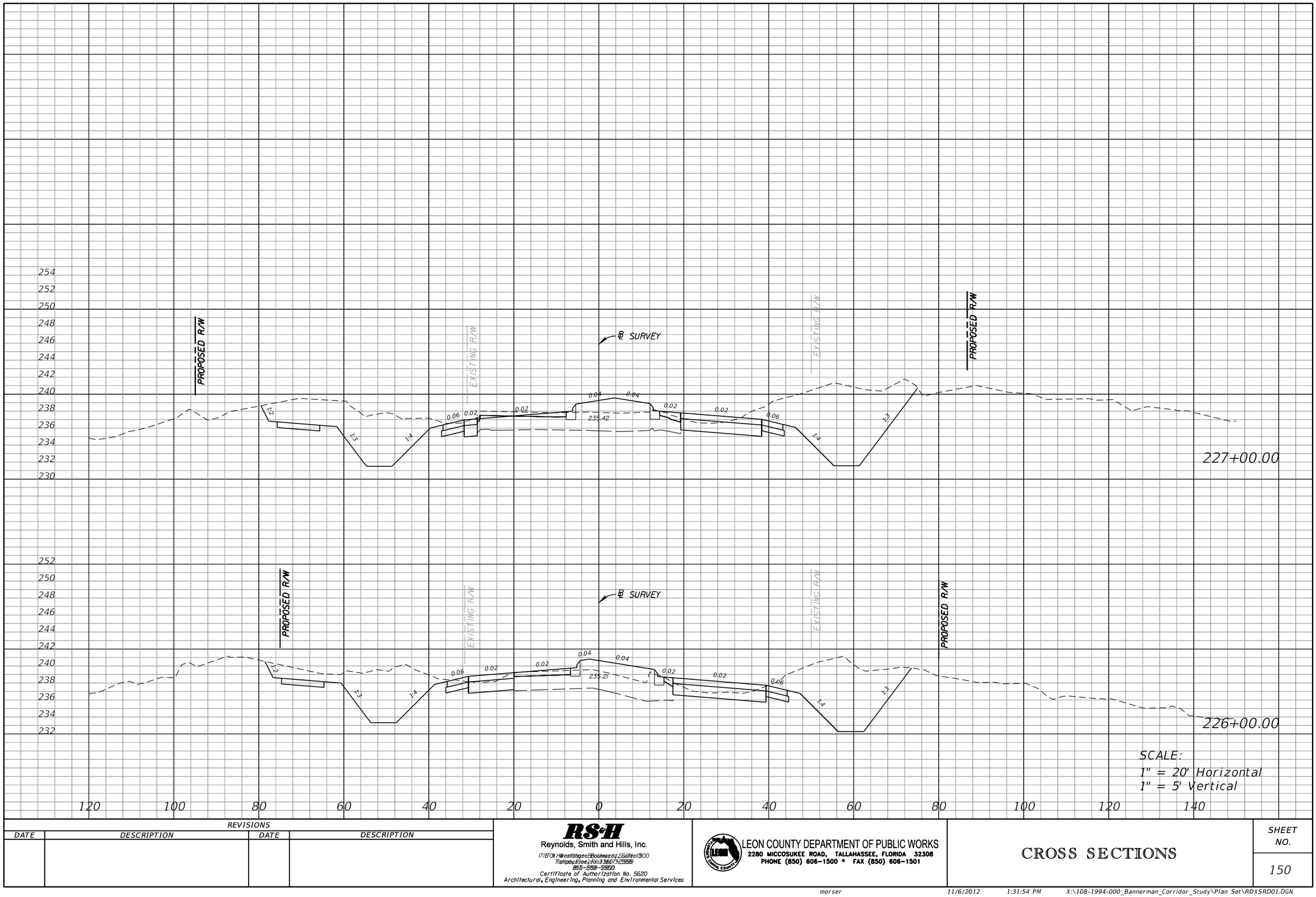

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
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SHEET NO. 150

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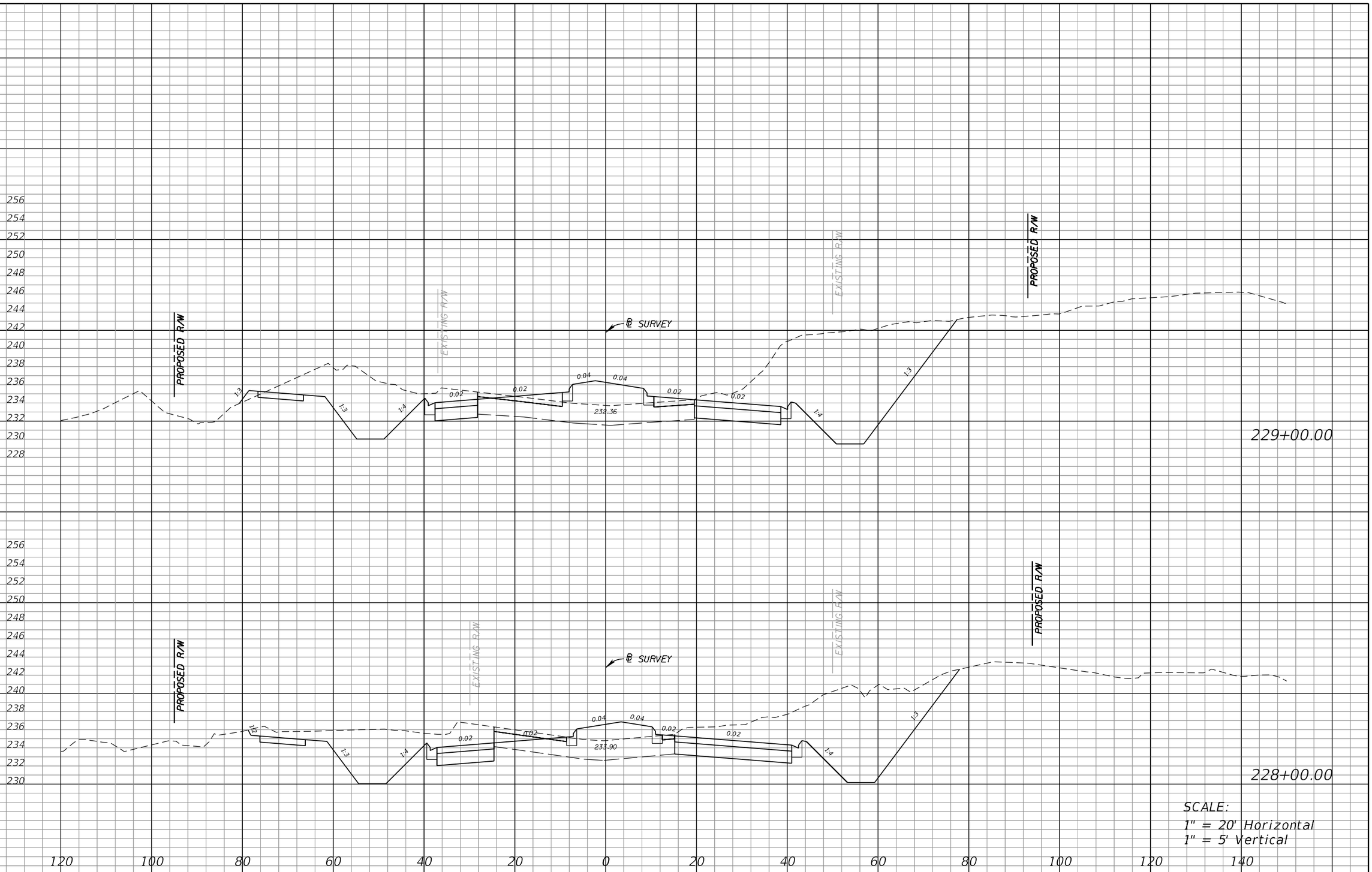

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 Commonwealth Boulevard, Suite 1500
Tallahassee, Florida 32303-7525
850-558-2500
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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SHEET NO. 151

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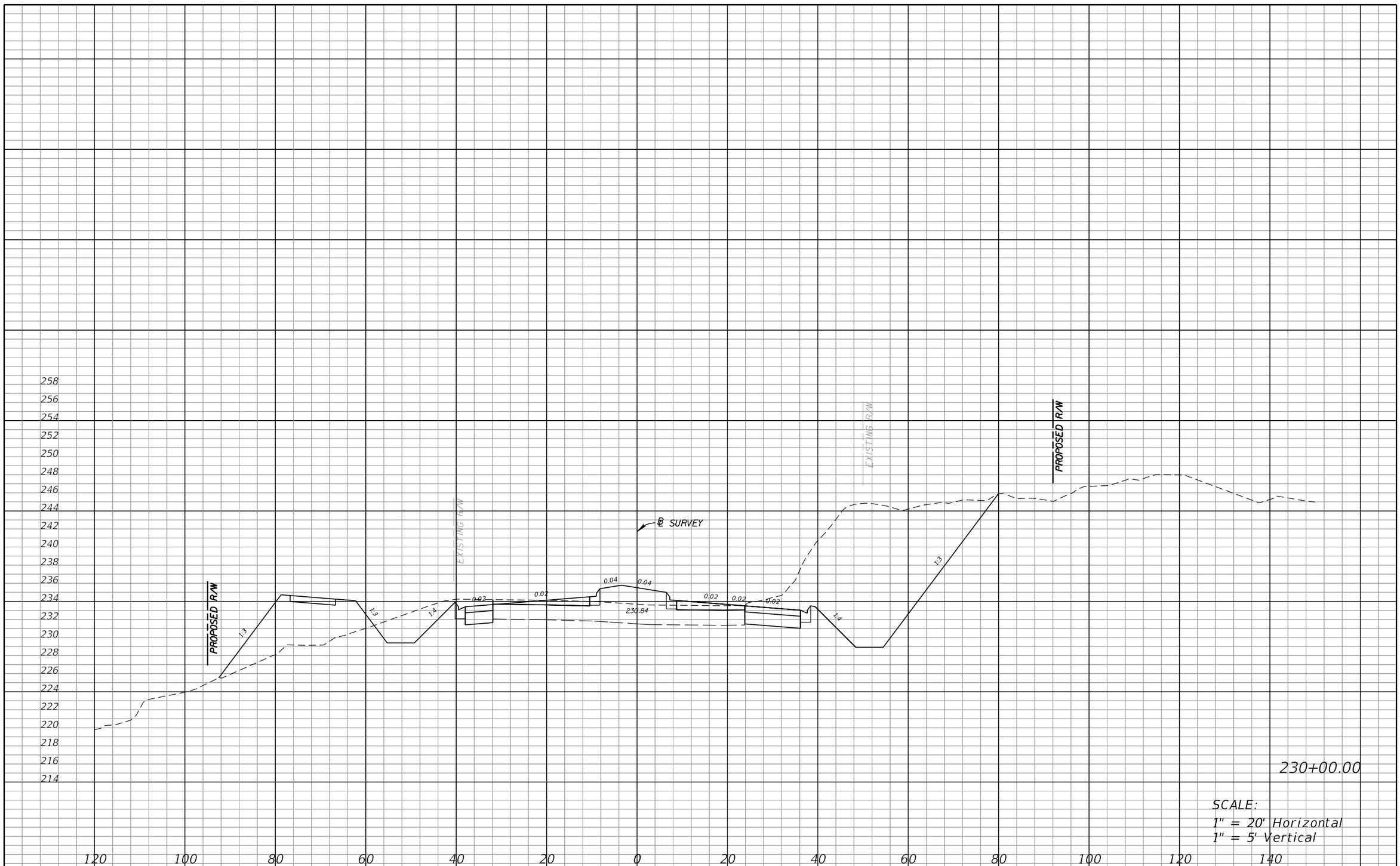

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33607-3825
813-282-2565
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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SHEET NO. 152

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
17170 N. Westshore Boulevard, Suite 1500
Tampa, Florida 33760-2599
813-552-2550
Certificate of Authorization No. 5620
Architectural, Engineering, Planning and Environmental Services

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2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
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CROSS SECTIONS

SHEET NO. 153

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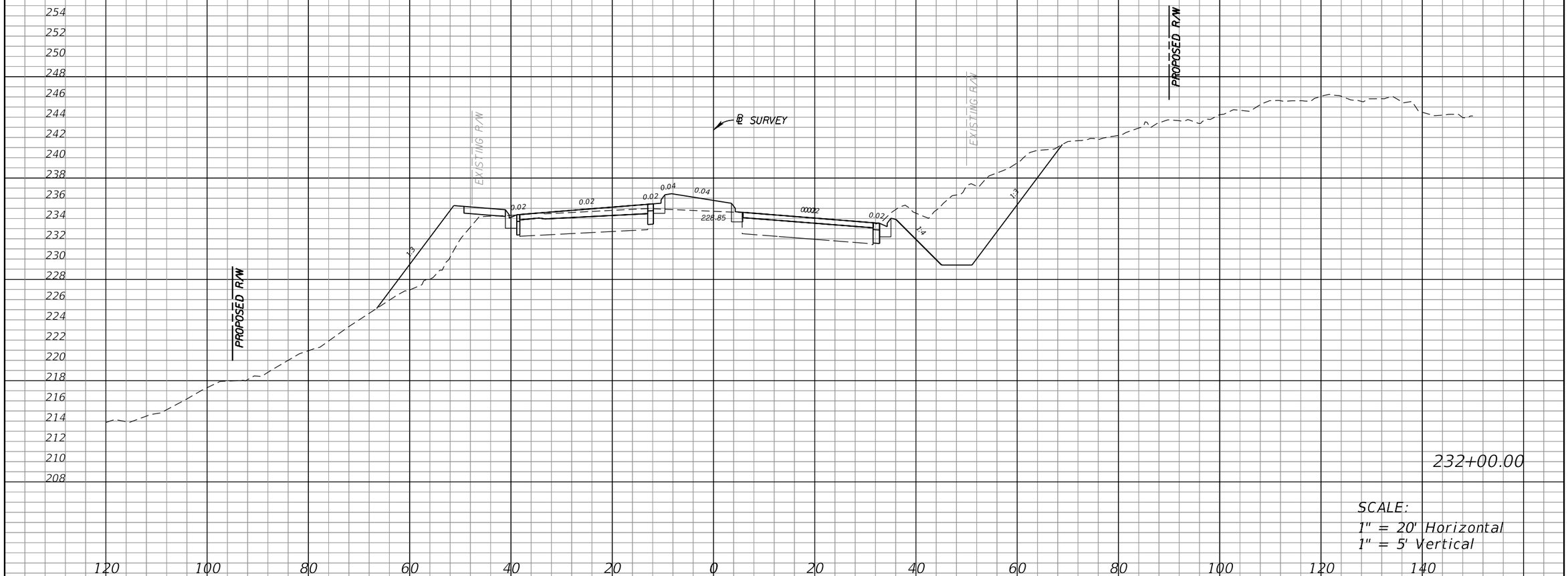

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
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813-282-2500
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CROSS SECTIONS

SHEET NO. 154

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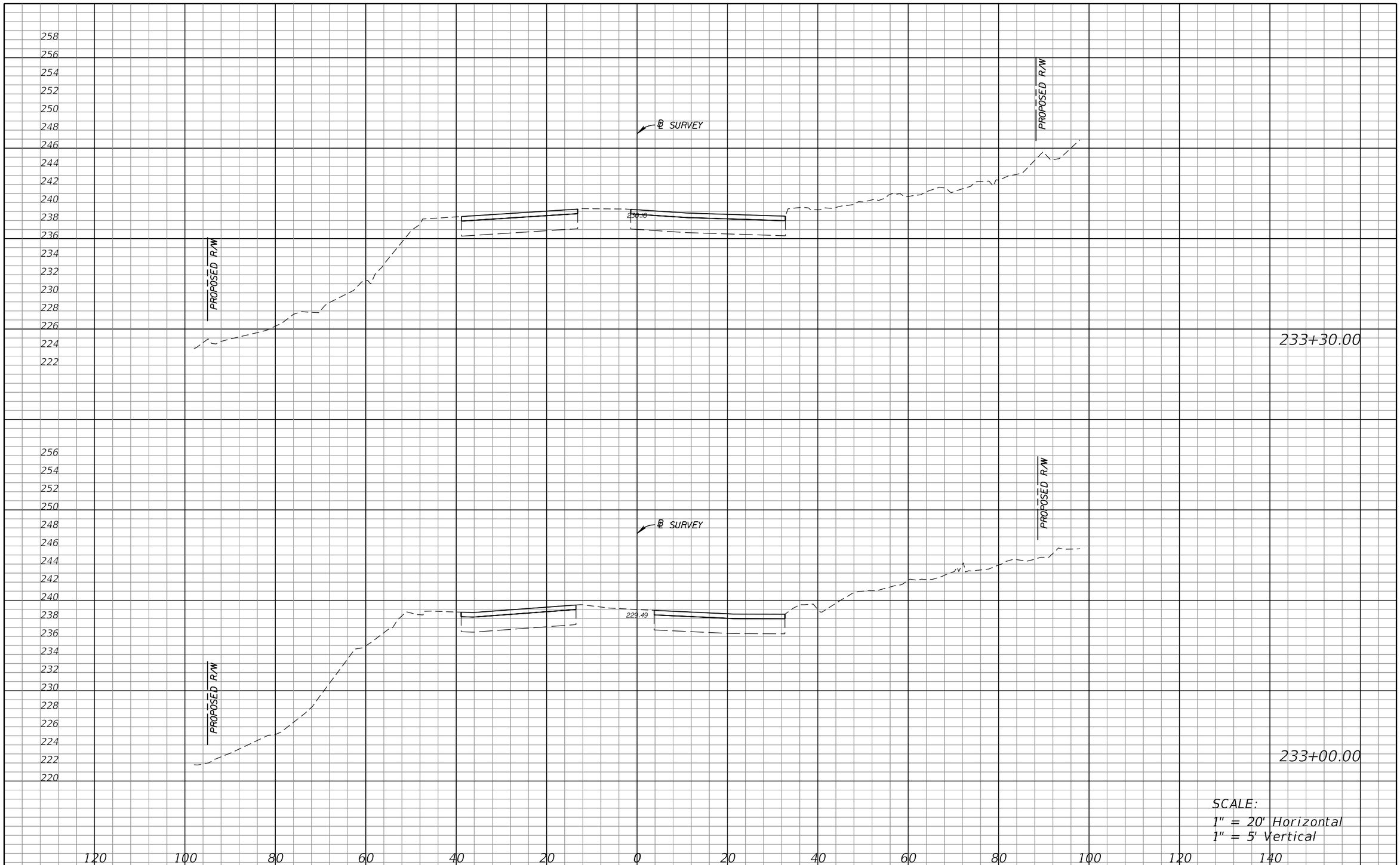

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1715 North Westshore Boulevard, Suite 1500
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813-282-2500
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Architectural, Engineering, Planning and Environmental Services

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