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Mr. Joseph DeCicco  
Senior Environmental Specialist,  
City of Clearwater  
100 South Myrtle Avenue  
Clearwater, Florida 33756

Cardno

3905 Crescent Park Drive  
Riverview, FL 33578  
USA

Phone +1 813 664 4500  
Fax +1 813 664 0440

[www.cardno.com](http://www.cardno.com)

**Submitted via email to: [Joseph.DeCicco@MyClearwater.com](mailto:Joseph.DeCicco@MyClearwater.com)**

**Subject: Expanded Ground Penetrating Radar (GPR) Survey at the St Matthews Baptist Church Cemetery.**

Dear Joe:

Cardno is pleased to provide the following scope of work to complete an expanded GPR survey at the St. Matthew's Baptist Church Cemetery for the above-referenced property (Figure 1).

#### **Background / Purpose:**

In February/March 2020, a partial GPR survey was conducted by archaeologists with the Florida Public Archaeology Network (FPAN) at the Frank Crum Staff Leasing Campus located at 100 S. Missouri Ave in Clearwater, Florida (Figure 2). Around 70 possible burials were identified through that survey, and subsequent ground truthing operations led by Cardno confirmed the presence of historic burials on the property. Historical records indicate the cemetery was originally 2.5 acres, with the eastern 30 feet of the property conveyed to the City of Clearwater in the 1950s in order to expand and pave Missouri Avenue.

As part of the recommendations from the archaeological ground truthing and verification survey, Cardno staff proposed an expanded GPR survey of the property. The goal of this survey would be to identify additional historic burials within the suspected cemetery limits, and determine the actual land-use boundaries of the cemetery now situated on the Crum property. This information is vital in order to create an appropriate management plan as well as to determine next steps for the cemetery property. This proposal and project budget are subject to change based on project modifications, and consultation with the property owner and other stakeholders.

#### **Proposed Expanded GPR Survey**

The present scope includes GPR survey of all previously un-surveyed, and accessible, areas within the suspected boundaries of the St Matthews Baptist Church Cemetery plus a 30-foot buffer (Figure 3). Cardno will utilize a GSSI SIR 4000 GPR unit with a 400 MHz antenna in open areas in order to identify the depth and number of additional historic burials, as well as the actual extent of the cemetery where possible. All GPR grid locations will be mapped using sub-centimeter accuracy using appropriate GPS equipment.

Given the possibility of historic burials beneath Missouri Avenue, Cardno recommends the inclusion of a portion of the roadway within the expanded GPR survey. T2, a legacy company of Cardno, will utilize a multi-channel Stream EM GPR unit along the roadway and along selected

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drives within the Crum property. Stream EM is pulled behind a vehicle, allowing for rapid data collection in areas that would be difficult to access with traditional GPR technology. It is also equipped with both 200 and 600 MHz antennae which allow for deep data collection even in areas of complicated subsurface utilities.

The GPR testing plan will result in a locational data model that will provide imaging at varying depths beneath the ground surface, and will be used to determine where grave shafts (infilled holes from burials) or burials (coffins or human remains) are located within the property, as well as the relative depth of potential burials beneath the current ground surface. After analysis of the GPR survey data is completed, the results will be compiled in a final report document and submitted for review and comment.

#### **Task 1 – Mobilization**

Upon receipt of a work order and notification to proceed Cardno will begin the mobilization process for the project. This will include coordination with the landowner for appropriate site access, equipment preparation, public meetings, or consultation with any other stakeholders.

#### **Task 2 – GPR Survey**

GPR testing will be conducted across the project area using a GSSI SIR-4000 GPR unit with a 400mhz antenna to determine the extent, depth, and number of potential burials or other buried features. Survey methodology will be designed to maximize the potential to locate historic burials through the use of closely-spaced north south transects. Stream EM GPR will be utilized along roadways and drives within the survey area (Figure 3). All GPR grid locations and other relevant above-ground features will be mapped with sub-centimeter accuracy using appropriate GPS equipment.

#### **Task 3 – Data Processing and Mapping**

All GPR data will be processed using GSSI's Radan software in order to provide imaging at varying depths beneath the ground surface. All GPR data and grid corner locations will be integrated into a spatial data model using ESRI's ArcMap 10.8.1 software.

#### **Task 4 – Final Report**

After analysis of the GPR survey data is completed the results will be compiled into a draft final report. The final report draft will be submitted to the City of Clearwater 60 days from the completion of fieldwork. Additional consultation with stakeholders and descendants should be completed prior to any future work at the St Matthew's Baptist Church Cemetery site.

#### **Task 5 (Optional) – Boundary Survey**

T2 will prepare a Specific Purpose survey defining the boundary of the former St. Matthews Cemetery. The following task will be performed for this Alternate Survey Option.

- Recover sufficient existing survey monumentation to recreate and define the original cemetery boundary.
- Utilize laser scanner to locate existing improvements within the cemetery boundary.
- Provide five (5) hard copy surveys signed and sealed by a surveyor licensed in the State of Florida.

- Provide digital AutoCAD file with collected information.

#### Timeline:

With authorization to proceed from the City of Clearwater, Cardno will immediately coordinate with the property owner to schedule fieldwork. Weather permitting, GPR survey (Task 2) will take no more than two weeks. A final draft report (Task 4) will be submitted to the City of Clearwater 60 days from the completion of fieldwork. All stipulations in this proposal are based on the assumptions listed below, and are subject to change due to any amendments or increases in scope.

#### Compensation Schedule:

Task 1: Mobilization	\$ 2,420
Task 2: GPR Survey	\$ 25,903
Task 3: Data Processing and Mapping	\$ 8,960
Task 4: Report	\$ 5,440
<b>Total</b>	<b>\$ 42,723</b>

<i>Optional Task 5: Boundary Survey</i>	<i>\$ 5,500</i>
<i>Total with Optional Task 5</i>	<i>\$ 48,223</i>

#### Assumptions:

1. Cardno will have full access to the project area for the duration of the estimated field work time and the survey areas will be free of movable obstructions. Cardno can coordinate with the property owner in regards to GPR survey conducted within parking space areas.
2. Areas of heavy brush or vegetation, ditches and areas of standing water, or areas with other immovable surface obstructions will not be included in the survey due to the physical limitations of the GPR unit.
3. GPR survey cannot be conducted during or directly after rainstorms or inclement weather.
4. The discovery of major archaeological features not related to St. Matthew's Baptist Church Cemetery, such as structural remains or significant prehistoric deposits will be treated under a separate scope of work.

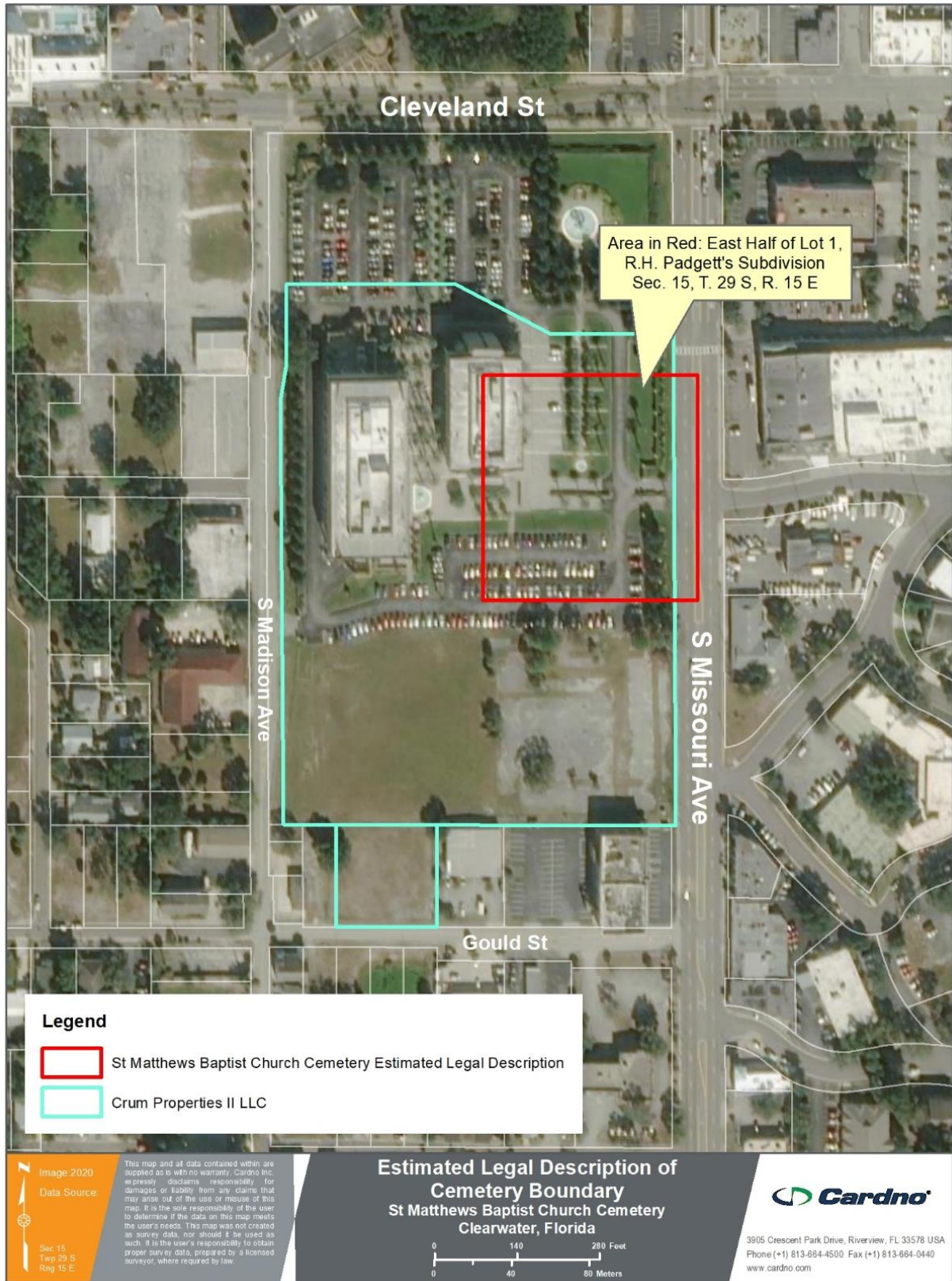
Sincerely,



Rebecca O'Sullivan, RPA  
Senior Archaeologist  
**CARDNO**  
Email [rebecca.osullivan@cardno.com](mailto:rebecca.osullivan@cardno.com)



Paul L. Jones, RPA  
Senior Principal  
Technical Director - Archaeology  
**CARDNO**  
Email [paul.l.jones@cardno.com](mailto:paul.l.jones@cardno.com)



**Figure 1. Estimated legal description (parcel boundary) of the cemetery**



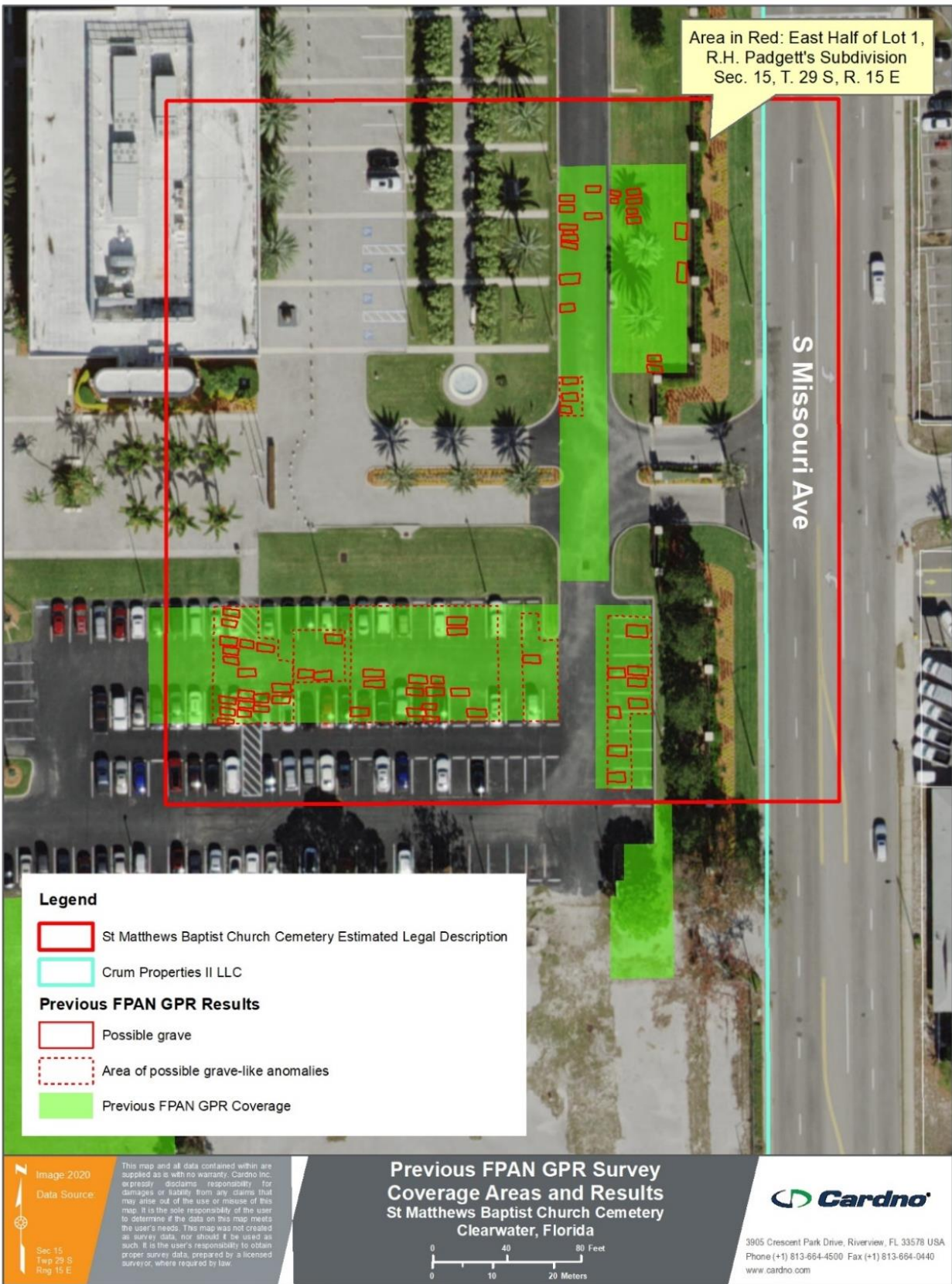


Figure 2. Previous GPR survey coverage and results



Figure 3. Proposed expanded GPR areas.