

ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES AMENDMENT NO. 7

WHEREAS, the Town of Watertown (“Owner”) and Ai3 Architects LLC (the “Designer”) (collectively, the “Parties”) entered into a Contract for Designer Services for the Watertown Elementary Schools Building Project on December 26, 2017 (the “Contract”);

WHEREAS, effective as of May 5, 2022 the Parties wish to further amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

- The Owner hereby authorizes the Designer to perform the following additional services in accordance with the Contract:

Watertown Elementary Schools Building Project Designer Amendment #7 Detail

Proposed Services	Fee
Additional Professional Structural Engineering Services related to the evaluation of the existing concrete structure at the kitchen walk-ins at Lowell Elementary School, per the attached proposal (Amendment #3) from Pare Corporation: (\$6,644.00 Pare Corporation fee + \$664.40 Ai3 10% administrative mark-up) =	\$7,308.40
Total:	\$7,308.40

- For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic and Extra Services:

Fee for Basic and Extra Services	Original Contract	Previous Amendments	Amount of This Amendment	After This Amendment
Educational Planning, Programming, and Evaluation of Potential Solutions Phase				
<i>Cunniff Elementary School</i>	\$168,000.00	\$0.00	\$0.00	\$168,000.00
<i>Lowell Elementary School</i>	\$273,000.00	\$0.00	\$0.00	\$273,000.00
<i>Hosmer Elementary School</i>	\$285,000.00	\$0.00	\$0.00	\$285,000.00
Schematic Design Phase				
<i>Cunniff Elementary School</i>	\$112,000.00	\$0.00	\$0.00	\$112,000.00
<i>Lowell Elementary School</i>	\$182,000.00	\$0.00	\$0.00	\$182,000.00
<i>Hosmer Elementary School</i>	\$190,000.00	\$0.00	\$0.00	\$190,000.00
Design Development Phase				

<i>Cunniff Elementary School</i>	\$0.00	\$1,013,259.94	\$0.00	\$1,013,259.94
<i>Lowell Elementary School</i>	\$0.00	\$895,659.99	\$0.00	\$895,659.99
<i>Hosmer Elementary School</i>	\$0.00	\$1,634,432.34	\$0.00	\$1,634,432.34
Construction Documents Phase				
<i>Cunniff Elementary School</i>	\$0.00	\$1,484,753.75	\$0.00	\$1,484,753.75
<i>Lowell Elementary School</i>	\$0.00	\$1,312,431.77	\$0.00	\$1,312,431.77
<i>Hosmer Elementary School</i>	\$0.00	\$2,394,972.36	\$0.00	\$2,394,972.36
Bidding Phase				
<i>Cunniff Elementary School</i>	\$0.00	\$115,447.39	\$0.00	\$115,447.39
<i>Lowell Elementary School</i>	\$0.00	\$102,048.45	\$0.00	\$102,048.45
<i>Hosmer Elementary School</i>	\$0.00	\$186,221.65	\$0.00	\$186,221.65
Construction Administration Phase				
<i>Cunniff Elementary School</i>	\$0.00	\$672,271.87	\$0.00	\$672,271.87
<i>Lowell Elementary School</i>	\$0.00	\$594,247.33	\$0.00	\$594,247.33
<i>Hosmer Elementary School</i>	\$0.00	\$1,084,403.76	\$0.00	\$1,084,403.76
Completion Phase				
<i>Cunniff Elementary School</i>	\$0.00	\$60,568.05	\$0.00	\$60,568.05
<i>Lowell Elementary School</i>	\$0.00	\$53,538.46	\$0.00	\$53,538.46
<i>Hosmer Elementary School</i>	\$0.00	\$97,698.89	\$0.00	\$97,698.89
Phase 1: Site Surveyor – Topographical & Boundary Survey	\$67,199.00	\$0.00	\$0.00	\$67,199.00
Phase 1: Preliminary Geotechnical Evaluation of Proposed Site Area	\$33,000.00	\$0.00	\$0.00	\$33,000.00
Phase 1: Traffic Study	\$42,900.00	\$0.00	\$0.00	\$42,900.00
Phase 1: Environmental Site Assessment	\$7,500.00	\$0.00	\$0.00	\$7,500.00

Phase 1: Soil Characterization	\$15,000.00	\$0	\$0.00	\$15,000.00
Phase 1: Hydrant Flow Testing	\$3,000.00	\$0.00	\$0.00	\$3,000.00
Phase 2: Site Surveyor	\$0.00	\$80,620.00	\$0.00	\$80,620.00
Phase 2: Traffic Study	\$0.00	\$17,600.00	\$0.00	\$17,600.00
Phase 2: Geotechnical Evaluation	\$0.00	\$66,965.00	\$0.00	\$66,965.00
Phase 2: On-Site Geotechnical Engineer During Site Excavation/Compaction (Construction Phase)	\$0.00	\$95,147.00	\$0.00	\$95,147.00
Phase 2: Hazardous Materials Investigation	\$0.00	\$15,400.00	\$0.00	\$15,400.00
Phase 2: Hazardous Materials Surveys, Monitoring, Testing and Inspections (Construction Phase)	\$0.00	\$144,368.00	\$0.00	\$144,368.00
Phase 2: Site Permitting and Approvals Planning Board	\$0.00	\$49,500.00	\$0.00	\$49,500.00
Phase 2: Hydrant Flow Testing	\$0.00	\$3,300.00	\$0.00	\$3,300.00
Phase 2: Irrigation Services (Hosmer ONLY)	\$0.00	\$11,660.00	\$0.00	\$11,660.00
Phase 2: Soil Characterization	\$0.00	\$16,500.00	\$0.00	\$16,500.00
Phase 2: Installation Management of FF&E	\$0.00	\$38,000.00	\$0.00	\$38,000.00
Phase 2: LEED/Sustainability	\$0.00	\$200,000.00	\$0.00	\$200,000.00
Phase 2: Zoning or Regulatory Variances, Submittals, Approvals	\$0.00	TBD	TBD	TBD

Phase 2: Design, Specifications, and Procurement of Technology Equipment which is not part of the Building Infrastructure and/or Building Construction Contract Documents	<i>By Owner</i>			
Amendment No. 2: Lowell ES Solar Electric System	\$0.00	\$122,550.00	\$0.00	\$122,550.00
Amendment No. 3: Hosmer ES O'Connell Field Amenities	\$0.00	\$99,400.00	\$0.00	\$99,400.00
Amendment No. 4: Cunniff ES Landscape Modifications	\$0.00	\$1,650.00	\$0.00	\$1,650.00
Amendment No. 5: Hosmer ES Additional FF&E	\$0.00	\$6,930.00	\$0.00	\$6,930.00
Amendment No. 6: Hosmer ES Solar Canopies Relocation	\$0.00	\$37,667.50	\$0.00	\$37,667.50
Amendment No. 7: Lowell ES Existing Concrete Investigation	\$0.00	\$0.00	\$7,308.40	\$7,308.40
Total Fee	\$1,378,599.00	\$12,709,213.50	\$7,308.40	\$14,095,120.90

3. The Construction Budget shall be as follows:

Original Budget: N/A
Amended Budget: \$137.5M (Project Budget: \$170M)

4. The Project Schedule shall be as follows:

Original Schedule: October 2018 (Completion of Schematic Design Phase)
Amended Schedule: Design Development - complete July 2019
Construction Documents - complete January 2020
Bidding - complete Sept. 2019 thru March 2020
Construction Administration - complete September 2023
Completion - complete September 2024

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

6. Detailed Scope of Services as follows:

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER:

Thomas J. Tracy
(print name)

City Manager, City of Watertown
(print title)

By _____
(signature)

Date _____

DESIGNER:

James S. Jordan
(print name)

Partner, Ai3 Architects LLC
(print title)



By _____
(signature)

Date May 5, 2022



**AMENDMENT
TO THE
PROFESSIONAL SERVICES AGREEMENT**

To: Mr. Daren Sawyer, AIA
(Architect's Representative)

Amendment Number: 3
Pare Project #: 19123.02

In accordance with the Agreement dated: September 6, 2019

between the Architect: Ai3 Architects, Inc.

and the Consultant: Pare Corporation

for the Project: Lowell Elementary School
Professional Structural Engineering Services
Watertown, MA

Authorization is requested

- to proceed with Additional Services or a Change in Services
 to incur Additional Reimbursable Expenses

As Follows:

Evaluation of Existing Concrete Structure at Kitchen Walk-Ins

A portion of the existing first floor concrete structure (i.e. flat slab and beams) will support a walk-in cooler and freezer with an approximate total weight of 14,500 pounds (equivalent uniform load of approximately 200 pounds per square foot). This area is currently utilized as office space and the weight of the proposed walk-ins represents a significant increase in loading relative to previous conditions. An evaluation of the existing concrete structure has been requested, however no record structural drawings indicating concrete thickness, steel reinforcement size/spacing, etc. are available to perform this evaluation. Therefore, Pare, along with its subconsultant Thielsch Engineering (Thielsch), proposes to perform a combination of non-destructive and destructive testing of the affected concrete slab and beams to determine this missing structural information. This proposed testing program consists of the following:

- Scan the concrete slab and beams with Ground Penetrating Radar (GPR) to locate the steel reinforcing bars. Note that the existing tile floor shall be removed within the area of the slab to be scanned. *Removal of flooring shall be by others (owner, contractor, etc.).*
- Once the reinforcing bars are located, a series of concrete cores will be taken to expose the bars and measure their size.
- One additional core will be taken through the slab to determine its thickness and perform a compressive strength test.



For this effort, Pare will coordinate the testing program with our subconsultant Thielsch and the project team and be present at the site during testing to document results. Pare will also prepare a memorandum summarizing the findings of our investigation.

Please note that the following items *are not* included in this proposal:

- The proposal assumes that ladders will be used to scan the concrete beams and underside of the concrete slab. If scaffolding or a lift is required, it shall be provided by others.
- Removal of tiling flooring within the area of scanning shall be by others.
- This proposal is for investigation of the existing concrete construction only. Structural analysis of the construction to support the walk-ins is included in our original agreement.
- This proposal does not include effort to design and detail reinforcements for the existing structure to support the walk-ins, if required. If reinforcements are deemed necessary, this effort will be handled in a supplemental agreement.

The following adjustments shall be made to compensation and time.

Fee: Additional Lump Sum Fee of **Six Thousand Six Hundred Forty Four Dollars (\$6,644.00)**. This fee is broken down as follows:

- Pare Corporation: \$ 2,800.00
- Thielsch Engineering (inclusive of 10% markup): \$ 3,844.000

Time: In accordance with a schedule agreed to by all parties.

SUBMITTED BY: Pare Corporation

AGREED TO: Ai3 Architects


(Signature)

(Signature)

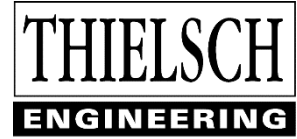
Kevin M. Champagne, Vice President
(Printed name and title)

(Printed name and title)

May 5, 2022
(Date)

(Date)

May 2, 2022



Pare Corporation
10 Lincoln Road, Suite 210
Foxboro, MA 02035

Attn: Mr. Kevin Champagne, P.E.
P: (508) 543-1755
E: KChampagne@parecorp.com

Re: Proposal for Existing Structure Investigation
Lowell Elementary School | Watertown, MA
Thielsch Proposal No. TEI-74-22-4086 Rev. 1

Dear Mr. Champagne:

Thielsch Engineering, Inc. (TEI) is pleased to provide Pare Corporation (Client) this proposal for destructive and non-destructive testing at the subject property located at 175 Orchard Street, Watertown, Massachusetts. The purpose of our services is to provide Ground Penetrating Radar (GPR) and concrete coring services on the interior concrete slab and beams to identify concrete depth, steel reinforcing spacing, depth and size and extract specimens for laboratory compressive strength testing.

SCOPE OF SERVICES

TEI will perform testing and sampling in accordance with the scope of services listed below and can be mobilized with 1-week notice to proceed and a 48-hour confirmation. A shorter mobilization time may be possible, but will be dependent on staff availability at the time of the request.

Pursuant to your request, we anticipate that our services will include the following:

- ❖ Perform 2-D GPR scanning using a GSSI StructureScan Mini XT to map out the steel reinforcing (rebar) within representative sections of the interior concrete slab and beams. Scanning will be performed at 6-inches intervals in longitudinal and transverse scan configurations. See **Attachment A** for equipment information.
- ❖ Use wet core drilling methods in accordance with ASTM C42 “Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete” to extract one (1) concrete specimen from the concrete slab for compressive strength analysis.
 - Compressive core specimen will be cut using a 3- or 4-inch diameter drill bit depending on the position of the steel reinforcing and to the full depth of the slab in an attempt to achieve as close to a 2:1 ratio as possible.
- ❖ Expose rebar in seven (7) locations throughout the concrete slab and support beams. Measure exposed rebar using a SAE ruler to verify size.

- ❖ Concrete core holes will be repaired using a high strength grout.
- ❖ Perform compressive strength testing of extracted concrete core specimen in accordance with ASTM C39, "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens." The core will be measured, photographed and catalogued for further examination.
- ❖ Provide a summary report within 2-weeks of completed services to include GPR findings and laboratory compressive strength results.

It is understood that:

- ❖ All scanning/coring locations can be accessed using a ladder. In the event that a lift is required to access any locations, Client will be responsible for providing a lift.
- ❖ TEI will not be responsible for repairing any removed and/or damaged floor tiles at the selected coring locations.
- ❖ All services will be completed during regular daytime hours (Monday-Friday 6:00AM–6:00PM) and no services will be performed outdoors. Off-hour services can be provided as needed and quoted separately.
- ❖ The proposed survey areas will need to be free of any obstacles prior to GPR scanning. Data collection will be limited when obstacles are encountered. Any flooring systems above the concrete slab should be removed prior to performing GPR surveying.
- ❖ TEI will provide its services on a best-efforts basis to locate subsurface objects of interest (i.e. steel reinforcement) embedded within the concrete slab-on-grade. TEI makes no representation that all subsurface objects will be identified in the time allotted or can be located using the GPR techniques and equipment proposed.
- ❖ TEI personnel will not be asked or expected to use any equipment or perform any work that does not meet OSHA requirements.

In the event that the above conditions change, TEI will communicate with the Client to seek alternative testing methods and the scope of work and compensation will be renegotiated as necessary.

GPR LIMITATIONS

GPR interpretation is a subjective geophysical method. The interpretive process uses GPR reflections to identify anomaly patterns as subsurface targets, but in doing so does not explicitly identify the target type. Data migration and hyperbola fitting is utilized to provide estimates of these identified patterns, size and depth relative to the GPR scan surface. Site surface features and utility plans provide crucial information to assist in further defining identified anomalies. Test pits, concrete coring, and/or vacuum borings are also recommended to provide ground-truth information for GPR subsurface targets.

Typically, GPR antennas with a central frequency of 400 MHz and higher can detect utilities and other objects with a diameter of 1-inch per foot of depth. (6-inch diameter pipe can be detected at depths of 0- to 6-feet below scan surface.) This diameter-to-depth ratio decreases as lower frequency antennas are utilized for scanning. For a 270 MHz antenna, the detection ratio is a diameter of 1-inch per 2/3-foot of depth. (6-inch diameter pipe can be detected at depths of 0- to 4-feet below scan surface.)

GPR signal penetration is site-specific, based on the local dielectric properties of soil, backfill materials, concrete slab, reinforcing steel, and the age of the slab. GPR signals propagate well in resistive materials such as sand, gravel and unreinforced concrete. GPR will often experience signal attenuation and target resolution loss when surveying in areas with brackish surface or groundwater, road salts, clay soils or ash/cinder containing fill. Scanning over slab that contain large amounts of reinforcing steel in a tight configuration also restricts the ability for the GPR to detect material and objects below the reinforcing steel layer.

GPR interpreted target depths are determined through hyperbola fitting and typical values of known materials. GPR velocities and depth estimates can vary if the medium under investigation or the soil's water content is not homogeneous throughout the scan area. Utility targets are interpreted on the basis of reflection anomalies of similar size and depth that exhibit a linear pattern through parallel scans. GPR scans cannot verify that all such anomalies are related, though this is typically the case. Objects composed of fiberglass, plastic, or clay can potentially be difficult to detect if located in close proximity to soils with similar dielectric properties or surrounded above or around additional reflecting targets such as reinforcing steel or other utilities.

COMPENSATION

TEI is expecting to complete the project with a 2-man crew working one (1) day. Services will be billed as follows due upon receipt of invoice. The total for this project is estimated to be **\$3,495**.

Coring & GPR Field Services:	\$2,670 LS (1 estimated)
<i>*Includes 2-man crew, equipment, mileage</i>	
Concrete Compressive Strength Test:	\$75/each (1 estimated)
Report Deliverable:	\$750 LS

Please call me at (401) 467-6454 ext. 3132 if you have any questions. Thank you for your consideration.

Sincerely,
THIELSCH ENGINEERING, INC.



Allison Ferrara
Operations Manager

Accepted by:
PARE CORPORATION

Printed Name:

Date:



Complete GPR Systems for Concrete Inspection

StructureScan™ Mini XT

www.geophysical.com

The StructureScan Mini XT is GSSI's newest generation of our very popular all-in-one GPR systems. The StructureScan Mini XT offers a 2.7 GHz antenna for superior target resolution and can reach depths of 20 inches (50 cm). Ideal for locating rebar, conduits, post-tension cables, voids and real time determination of concrete slab thickness.



- 1** All-in-One handheld GPR system
- 2** Ergonomic handle with six-button control
- 3** HD touchscreen display with easy to use operator interface
- 4** Survey wheel encoder
- 5** Guiding laser for locating and 3D surveying

Integrated Tool

All-in-one concrete inspection tool - antenna, positioning system and control unit

State-of-the-art touchscreen interface and six-button control for enhanced usability

Rugged, Compact Design

This new generation system is IP-65 rated to withstand the jobsite's toughest conditions

System Flexibility

The StructureScan Mini XT will offer multiple accessories for various survey options and advanced data collection modes

Value

The perfect blend of price and performance, backed by a two-year warranty

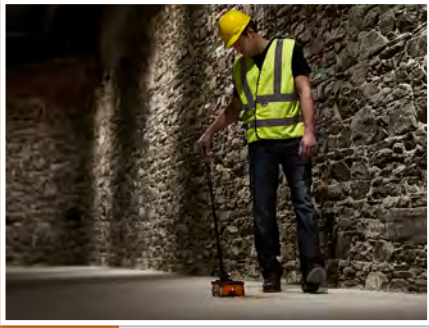


"The lasers in the StructureScan Mini are great when marking out rebar, especially when we're at a job site with bad lighting."

Chase Johnson, GPRS San Francisco

StructureScan Mini XT Features

The StructureScan Mini XT is ideal for locating the position and depth of metallic and non-metallic objects in concrete structures, including rebar, conduit, post-tension cables, voids and service utilities. In addition, the Mini XT can help identify structural elements including pan deck, concrete cover and slab thickness.



High Frequency, High Resolution Concrete Antenna

- The StructureScan Mini XT employs a new 2.7 GHz antenna positioned 8 mm off the surface, providing additional ground clearance which allows the antenna to be used over rough concrete surfaces. This antenna provides excellent near surface resolution while also maintaining the ability to resolve deeper targets.

Enhanced Data Visualization

- Get first-in-class data visualization with a state-of-the-art 6.5 inch HD touchscreen user interface and different operation modes designed for beginner to advanced use.
- Use QuickScan to collect data with the push of one button, or select any of the app-based data collection options including ScanMax and Scan3D for advanced data interpretation.
- The StructureScan Mini XT makes it easy to customize the data display with a variety of color adjustments. Real-time migrated data, onscreen reference markers and real-time signal floor indicator are also available.

Forward Thinking Design

- Incorporated into the design are three accessory ports that allow for future expansion. The extension pole accessory, with six-button remote operation, is ideal for walking and wall surveys.

Typical Uses

- **Concrete inspection** – locate metallic and non-metallic targets in walls, floors and ceilings
- **Structure inspection** – bridges, monuments, walls, towers, tunnels, balconies, garages, decks
- **Condition assessment** – map relative concrete condition for rehab planning
- **Measure slab thickness**
- **Void location**

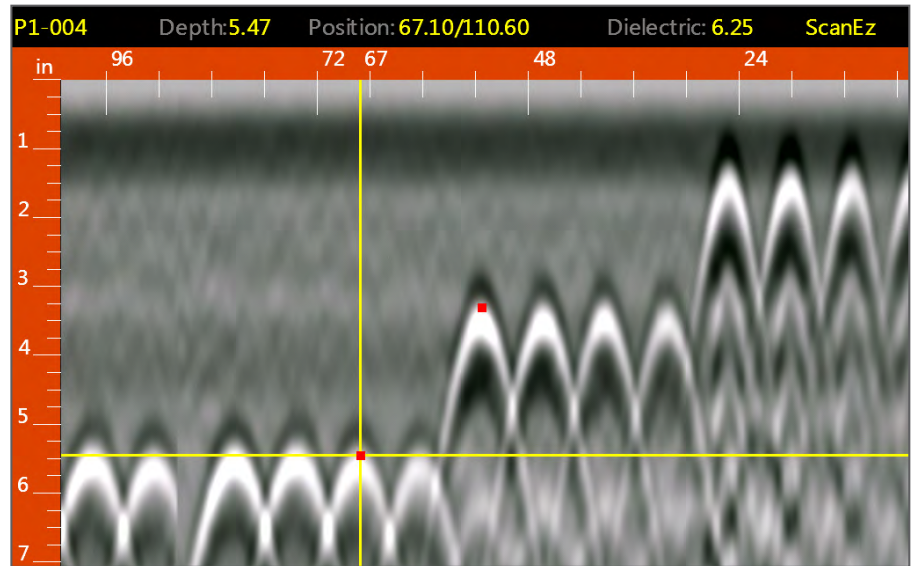
StructureScan XT Data Modes

The StructureScan Mini XT features three data collection modes; Simple, Standard, and Advanced.

Simple mode is perfect for quick data collection - simply select the depth of survey and concrete type, and start scanning. Standard mode offers two apps, Scan3D and ScanMax. Advanced Mode offers XScan and DualScan apps for expanded data interpretation.

2D Data Collection

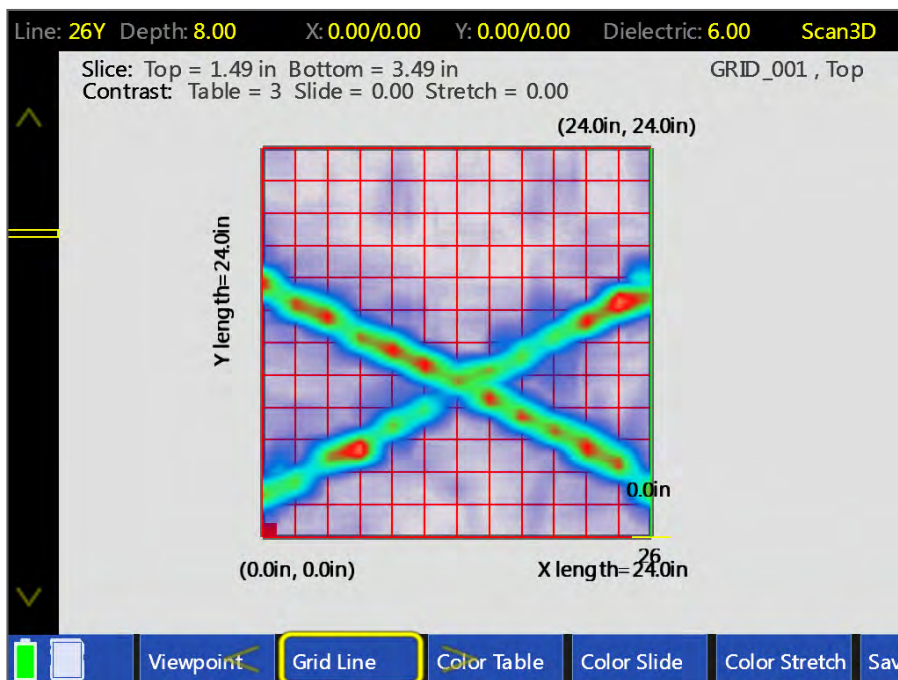
The StructureScan Mini XT provides intuitive data visualization and includes multiple color themes, save image functionality and real-time display adjustments.



Data illustrates several metallic targets at various depths collected in Standard mode using the ScanMax application. Red dots and crosshair identify user marked targets.

3D Data Collection

The StructureScan Mini XT provides intuitive data visualization and includes multiple color themes, save image functionality and real-time display adjustments.



Survey of a standard 2 x 2 grid. Data illustrates two metallic targets at varying depths, with one target crossing the other in a 45 degree angle.

StructureScan Mini XT Specifications

System	
Antenna Center Frequency	2.7 GHz
Display Modes	Linescan, Focus and 3D
Data Storage	14.5 GB (340 - 2x2 3D images)
Depth Ranges	4, 8, 12, 16, 20 inches (10, 20, 30, 40, 50 cm)
Battery	Li-ion Battery, 2.5 hour runtime (battery life dependent on level of display brightness and usage)
Data Format	RADAN .dzt
Languages	English, French, Japanese, Chinese
Environmental	
Operating Temperature	-4°F to 104°F external (-20°C to 40°C)
Storage Temperature	-40°F to 140°F external (-40° to 60°C)
Relative Humidity	<95% non-condensing
Environmental	IP-65 Rated
Mechanical	
Dimensions	9.3 x 6.2 x 7.3 in. (23.6 x 18.4 x 15.7 cm)
Weight	4 lbs. (1.8 Kg) with battery
System Height Off Ground	.31 inch (8mm)
Display Size	6.5 inches
Display Resolution	1024 x 768

Systems Include

StructureScan Mini XT
Dual bay battery charger with four (4) international adapters
Two Li-ion batteries
AC power adapter for battery charger
StructureScan Mini XT transit case
Safety wrist strap
3 mm hex driver tool
Data collection grids (sample pack)
User Manual
2-year warranty and training at a GSSI Training Center



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