FLEX® Ground Penetrating Radar Systems for Concrete Inspection

GSSI

THE STANDARD IN CONCRETE SCANNING

Every jobsite has hidden challenges. Before cutting, coring, or drilling into concrete, it's critical to know what lies below the surface. Striking rebar, post-tension cables, or live conduits doesn't just delay work—it endangers lives and reputations.

WHY CONCRETE SCANNING MATTERS

- **Avoid Costly Mistakes:** Prevent damage to embedded structural elements and utilities.
- **Enhance Safety:** Minimize the risk of injury from hitting live conduits or tensioned cables.
- **Keep Projects on Track:** Reduce unplanned delays and rework by knowing what's below.

TRUSTED BY THOUSANDS OF CUSTOMERS WORLDWIDE

With GSSI's advanced concrete scanning systems, you gain the confidence to work faster, smarter, and safer — protecting both your team and your reputation.

TYPICAL USES

- Structural Analysis and As-Built Verification
- Rebar and Conduit Detection
- Post-Tensioned Cable Locating
- Concrete Thickness Measurement
- Void and Delamination Detection

FLEX NX®

Flex NX provides you all-in-one simplicity, minimal navigation, and innovative data collection.

Flex NX, powered by Nexus, is today's most powerful and efficient concrete scanner, and it is brought to you by the most trusted name in the industry.

- Dual antennas
- Rapid 3D visualization
- Wireless connectivity to satellite antennas
- No subscription required

WIRELESS MADE EASY

Flex NX® allows for effortless pairing of wireless NX accessory antennas using Tap-to-Connect technology as well as wireless data transfer.

GET THE FULL PICTURE

Get the full picture using our one-pass cross polarization design to quickly and easily locate and identify targets.

MAKE THE COMPLEX SIMPLE

Use Flex NX's innovative Flex Mode to quickly highlight areas of interest in real-time without complicated setups or grids.

DELIVER RESULTS

Accurately mark your findings on the ground, then use GSSI Fusion to create and send interactive reports before you leave the jobsite.

SIMPLE

FLEXIBLE

TACKLE ANY JOB

The flexibility of your Flex NX and NX wireless antennas allows you to succeed no matter what the jobsite throws at you. NX25 and NX15 can now be used independently.

CHOOSE YOUR SETUP

Flex NX and NX antennas are designed with a universal mount to help reduce fatigue and provide better ergonomics. Switch between the handle, extension pole or off-the-shelf mounting accessories.

COMPLEX PROBLEMS, MANY SOLUTIONS

GPR data needs to be easy to collect and view. Flex NX provides multiple data collection and visualization modes, including the innovative and powerful Flex Mode. Now you have the flexibility you need to deliver trusted results.

YOUR TRUSTED PARTNER

You trust GSSI, the equipment we make and the results that you get from your system. In return, your customer trusts you and the results you deliver.

Every product we offer, including Flex NX, is built and tested with your jobsite environment in mind. Extreme heat, cold, dust and water are no match for your Flex NX system.

JOBSITE PROVEN

- Rated IP65
- -20°C to 50°C (-4°F to 122°F)
- High capacity Lithium-ion batteries

WE'VE GOT YOUR BACK

In addition to our industry-leading two year equipment warranty, our promise to you is to provide comprehensive training, unrivaled customer support and world class expertise.

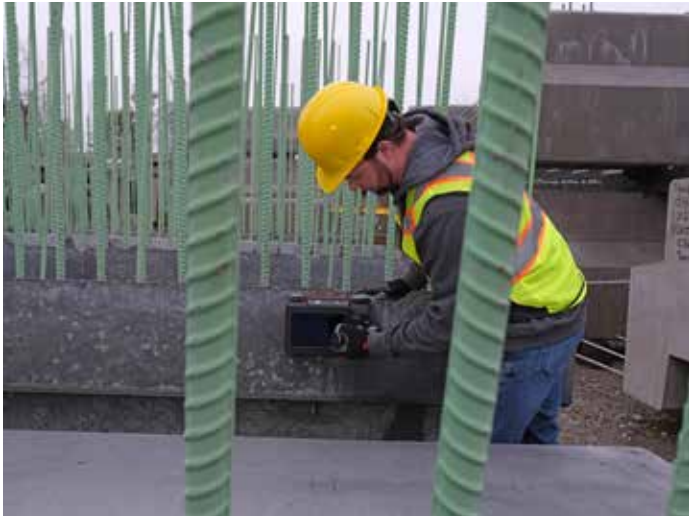
TRUSTED

EVERYTHING YOU NEED, READY TO GO

Each Flex NX system is bundled with the essentials to keep you working efficiently all day long. Every system includes:

- A dual-bay battery **charger**
- **Two high-capacity Lithium-ion batteries** for extended field use
- Your choice of transport:
    - A **rugged transit case** for maximum protection, or
    - Our newly designed, **Flex NX backpack**—ideal for hands-free mobility across the jobsite

Plus, for added comfort and convenience, an **accessory extension pole** is available.



FLEX LT™

Flex LT™, powered by Nexus, is a handheld concrete scanning system designed for contractors who need to locate and mark targets quickly and accurately—without compromising on performance or cost.

The simplicity of Flex LT means that you can complete your work faster without the need for complex setups or additional equipment. Just scan, mark and go.

SIMPLE

ALL-IN-ONE SIMPLICITY

Flex LT has an easy to use interface with minimal navigation, no wireless pairing, 7 inch integrated touchscreen and requires no subscription.

GET THE FULL PICTURE

Flex LT provides a complete view with one-pass cross polarization for efficient and accurate location of targets within concrete.

NO REGULATORY RESTRICTIONS

Flex LT meets strict regulatory requirements, ensuring smooth operation on any jobsite. With no camera or wireless connectivity, it is ideal for government sites and other secure environments.

DELIVER RESULTS

Accurately mark your findings on the ground, then use GSSI Fusion to create and send interactive reports before you leave the jobsite.

FLEXIBLE

GRAB AND GO

Flex LT fits easily into our new lightweight backpack for effortless deployment on the jobsite. Say goodbye to carrying heavy cases up flights of stairs.

ENHANCED FLEXIBILITY

Need to see deeper or access small areas? Flex LT is now able to connect to both the NX25 and NX15 satellite antennas with our new optional wired NX Tether Module. Make your Flex LT a kit with an NX25, NX15 or both.

CHOOSE YOUR SETUP

The repositionable handle and universal mount are designed to improve ergonomics and reduce fatigue, giving you greater comfort and flexibility during field operations.

TRUSTED

YOUR TRUSTED PARTNER

You trust GSSI, the equipment we make and the results that you get from your system. In return, your customer trusts you and the results you deliver.

Every product we offer, including Flex LT, is built and tested with your jobsite environment in mind. Extreme heat, cold, dust and water are no match for your Flex LT system.

JOBSITE PROVEN

- Rated IP65
- -20°C to 50°C (-4°F to 122°F)
- High capacity Lithium-ion batteries

WE'VE GOT YOUR BACK

In addition to our industry-leading two year equipment warranty, our promise to you is to provide comprehensive training, unrivaled customer support and world class expertise.

EVERYTHING YOU NEED, READY TO GO

Each Flex LT system is bundled with the essentials to keep you working efficiently all day long. Every system includes:

- A dual-bay battery **charger**
- **Two high-capacity Lithium-ion batteries** for extended field use
- Your choice of transport:
    - A **rugged transit case** for maximum protection, or
    - Our newly designed, **Flex LT backpack**—ideal for hands-free mobility across the jobsite

Plus, for added comfort and convenience, an **accessory extension pole** is available.

ONE PASS CROSS POLARIZATION

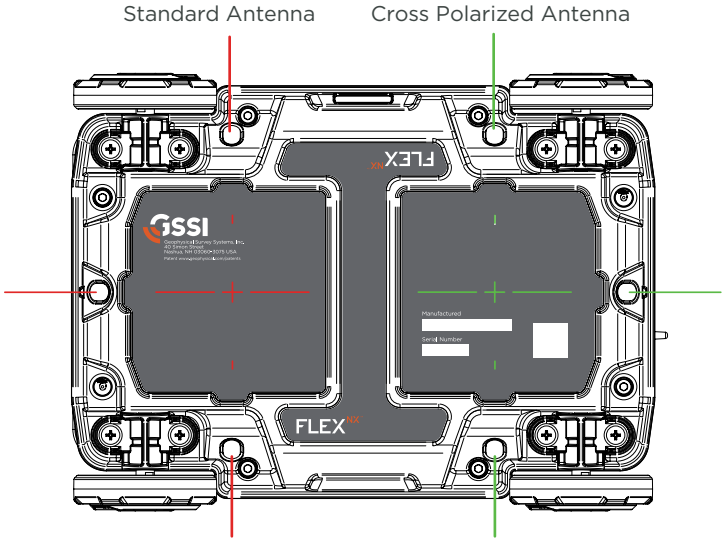
Flex NX and Flex LT use two antennas to maximize target identification and overcome the challenges of complex scanning jobs.

Don't settle for an incomplete image: see two datasets simultaneously and get the full picture!

Simple Concrete Environments: Use the **standard orientation** antenna in simple concrete environments to quickly highlight metallic targets.

Complex Concrete Settings: Use the **cross-polarized** antenna in situations where reinforcement is dense and other targets are expected within and below the slab.

All Situations: Scan with both antennas every time and be confident that nothing was missing.

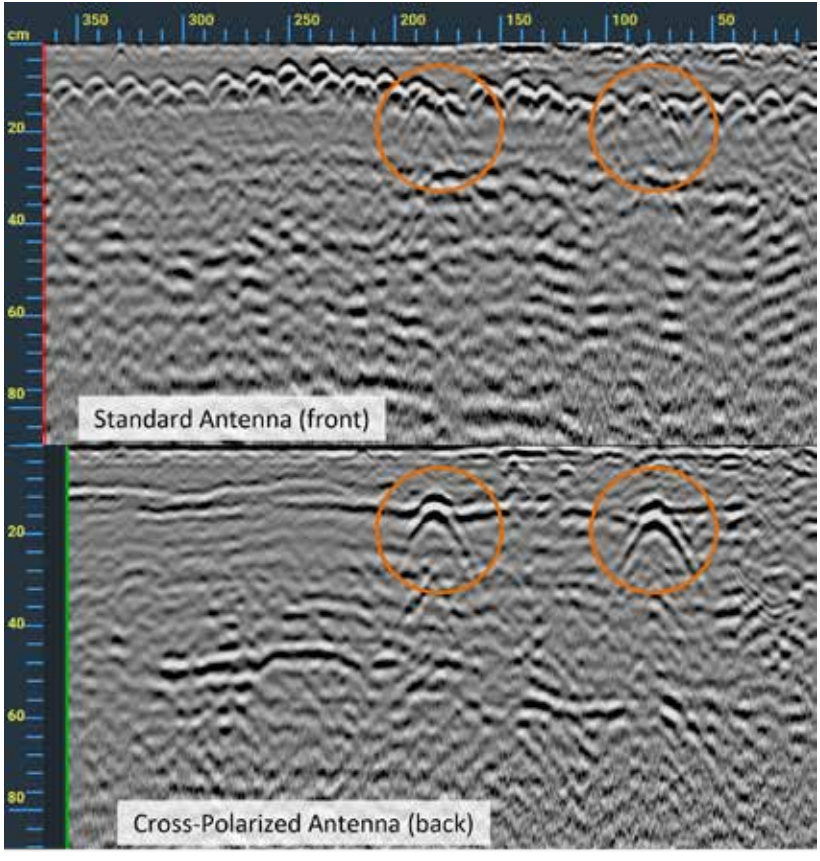


NOTE: Flex NX has lasers and Flex LT has colored markers

GET THE FULL PICTURE

Flex NX and Flex LT are unrivaled in their ability to find **hidden** and **obscured** targets. Each system incorporates two built-in antennas for effortless one-pass cross polarization. Using two different, but complimentary, antennas increases the likelihood of detecting every target in the slab.

Flex systems are especially effective at distinguishing **post-tension cables** from rebar, locating **plastic conduits**, and confirming **slab thickness** in congested areas. Scan with two antennas every time, and ensure that no detail goes unnoticed.



NX25™

SMALL AREA SYSTEM

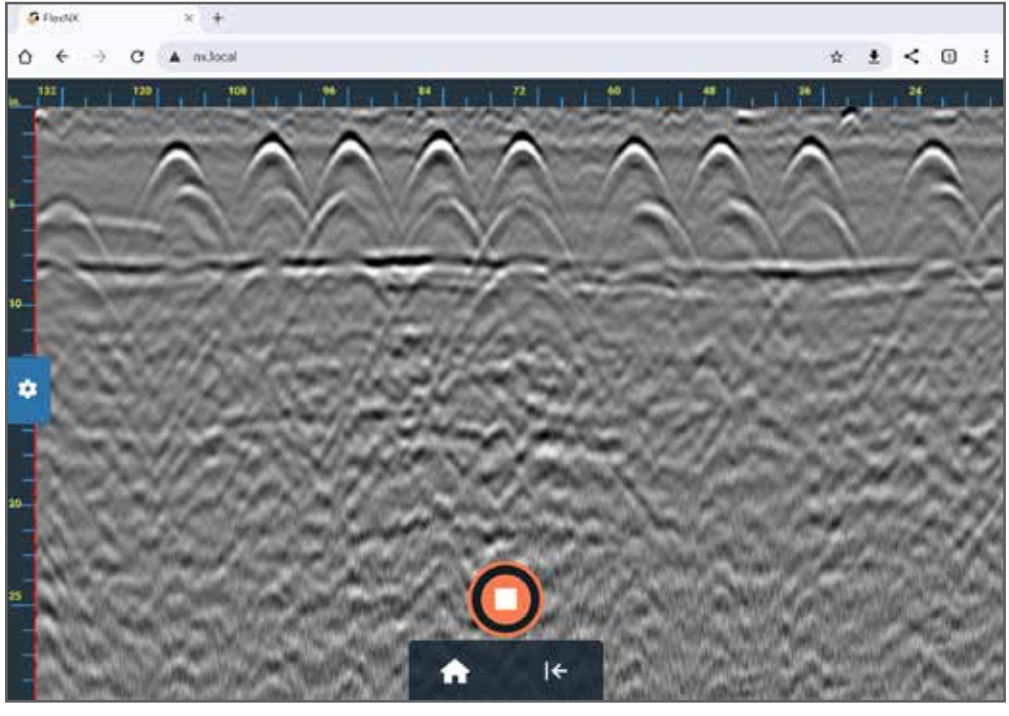
NX25™ powered by Nexus™, makes scanning easier than ever This lightweight and compact antenna is purpose -built for reaching difficult areas such as walls, ceilings, and scanning tight spaces. With its intuitive design, the new Nexus Elements™ Interface simplifies routine tasks and ensures that even basic operations are seamless and efficient.

- Effortlessly pair NX25 to any modern phone or tablet. No app required - directly connect through Wi-Fi and a web browser and you are good to go.
- NX25 was designed with your job conditions at the forefront. Use the adjustable survey wheel to easily switch between standard, cross polarized, and side car scanning based on the task at hand.
- NX25 is ready for work and includes two Lithium-Ion batteries that provide a combined battery life of 10+ hours.

Note: NX25 Small Area System cannot save data on its own without being connected to Flex NX or Flex LT.

NX25: BEST IN CLASS PERFORMANCE IN A COMPACT SIZE

This data is a screen shot taken from a tablet using NX25 Nexus Elements. GPR data was collected on a vertical concrete wall showing two layers of rebar and possible air void behind the wall.



NX15™

DEEP TARGET SYSTEM

With the NX15™ Deep Target System, inspecting thick slabs, slab-on-grade surfaces, and vertical columns has never been easier. Engineered for enhanced penetration, it offers a typical depth range of 0–150 cm (0–60 in) depending on site conditions.

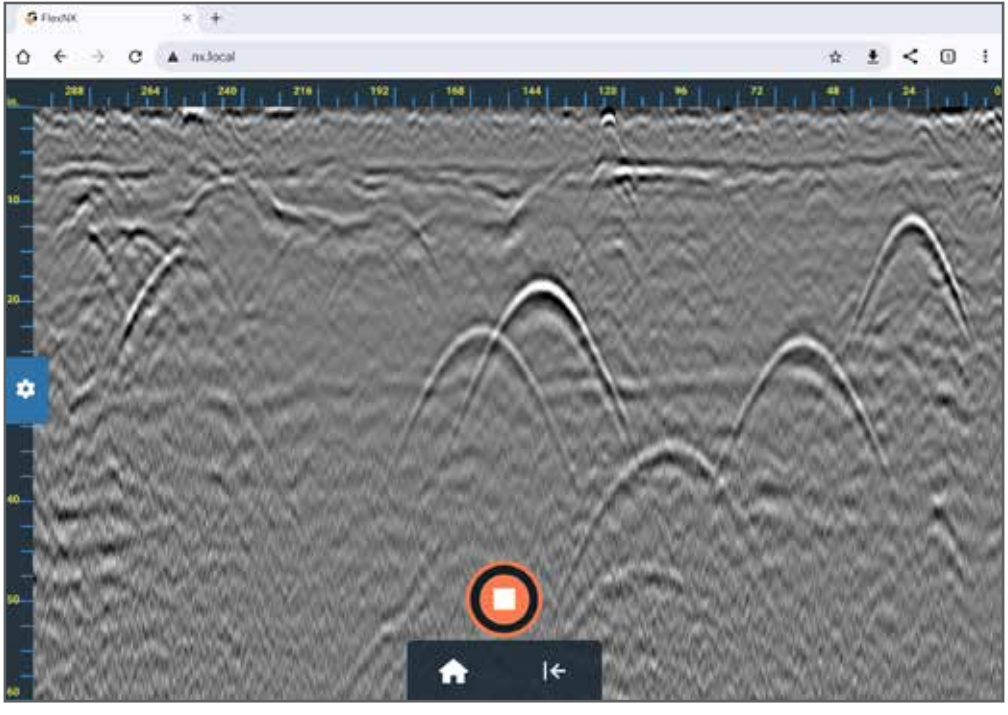
This antenna is purpose-built for scanning thick concrete and locating utilities below grade. NX15 pairs intuitive operation with the new Nexus Elements™ Interface. Its ergonomic form factor allows you to scan, mark, and move quickly from one task to the next, streamlining your workflow on-site.

- Effortlessly pair NX15 to any modern phone or tablet. No app required - directly connect through Wi-Fi and a web browser and you are good to go.
- NX15 was designed with your job conditions at the forefront. Use the adjustable survey wheel to easily switch between standard, cross polarized, and side car scanning based on the task at hand.
- NX15 is ready for work and includes two Lithium-Ion batteries that provide a combined battery life of 10+ hours.

Note: NX15 Deep Target System cannot save data on its own without being connected to Flex NX or Flex LT.

NX15: DELIVERING RESOLUTION AND DEPTH

Important targets could be installed below a concrete slab. Gain extra depth penetration while still resolving small, shallow targets inside the slab.



GSSI FUSION™

DELIVER RESULTS

You take pride in a job well done. Showcase your commitment to excellence and rise above the competition by delivering reports that are as high quality as your markouts.

GSSI Fusion is an easy-to-use reporting tool that delivers professional results directly from the field.

PURPOSE-BUILT REPORTING

A dedicated platform with a modern interface for creating polished, professional-grade reports tailored to client needs.

FLEXIBLE & AFFORDABLE

Offers a free tier for single users and scalable pricing for teams, ensuring you pay only for what you need.

OPTIMIZE DATA MANAGEMENT

Seamlessly imports Nexus project data, supports legacy datasets, and provides tools to edit, reorganize, and describe results with ease. Keep your data safe and secure.

ON-SITE EFFICIENCY

Enables report creation and delivery directly from the field, saving time and ensuring timely communication with clients. Supports individual and team workflows, ensuring high-quality, visually impactful reports every time.

EASY TO USE REPORT BUILDING FOR PROFESSIONAL RESULTS

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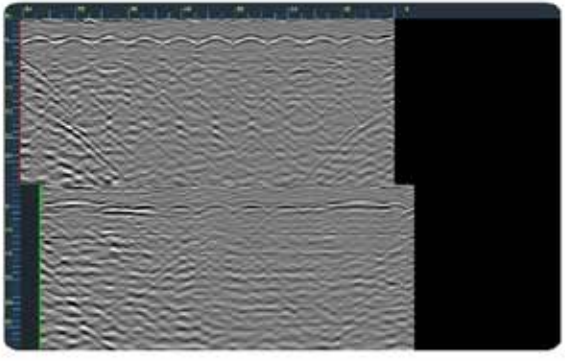
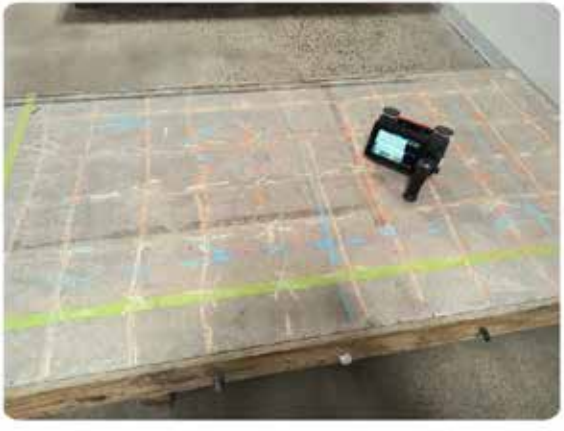


AOI_2



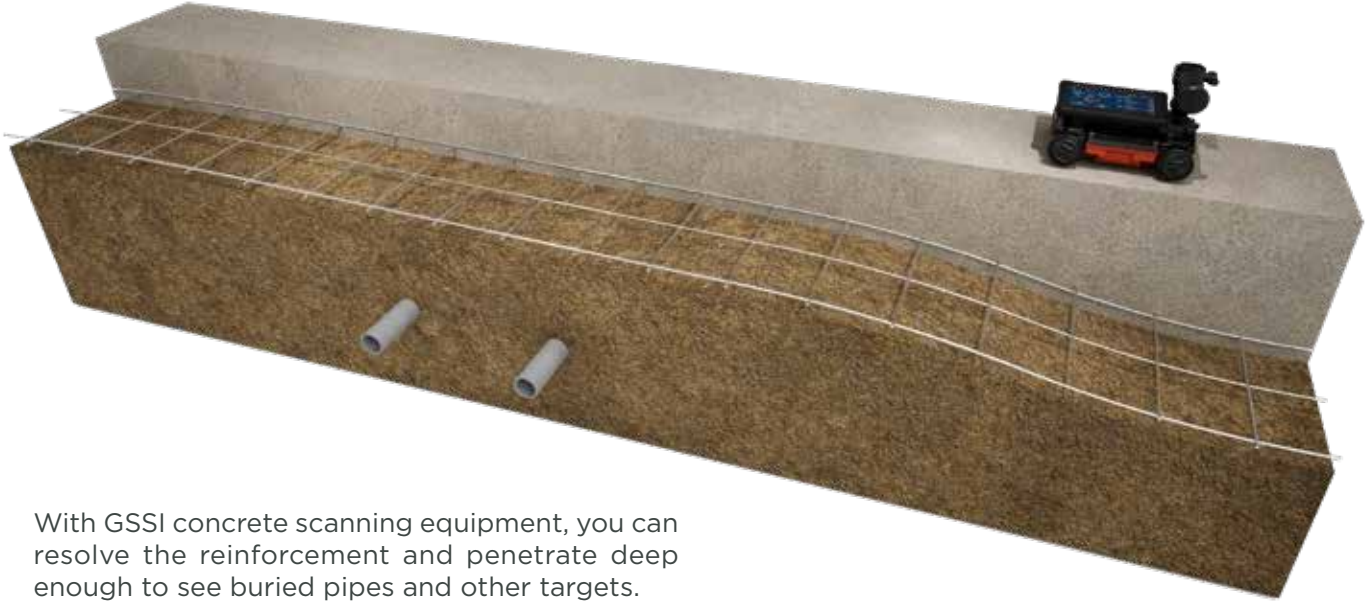
AREAFINDINGS

Ground-penetrating radar (GPR) is a valuable tool for locating both rebar and PEX pipe within a concrete slab. This technology is essential for avoiding accidental damage during construction or renovation projects. GPR works by sending radio waves into the slab and analyzing the reflections to identify subsurface objects. The distinct reflection patterns allow technicians to differentiate between metallic objects like rebar and non-metallic materials like PEX. This information helps create a clear map of the slab's interior, showing the precise location and depth of both rebar and PEX, allowing for safe and efficient drilling, coring, or cutting.

TRY GSSI FUSION FOR FREE!

SCANNING SCENARIO #1:
Dipping Wire Mesh and Subgrade Utilities

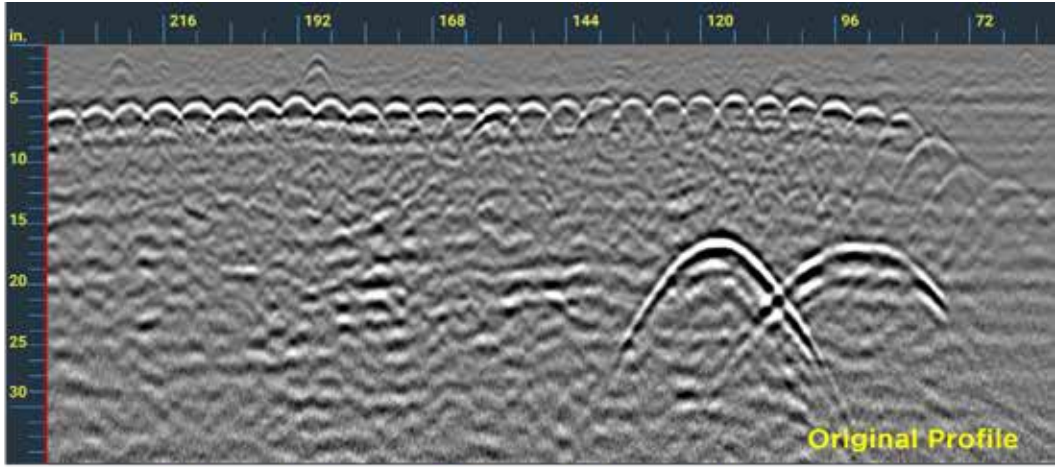
Wire mesh is a common reinforcement option for concrete, and is regularly spaced and arranged in a grid pattern. Unlike rebar, wire mesh is somewhat flexible and can occur at different depths across the slab.

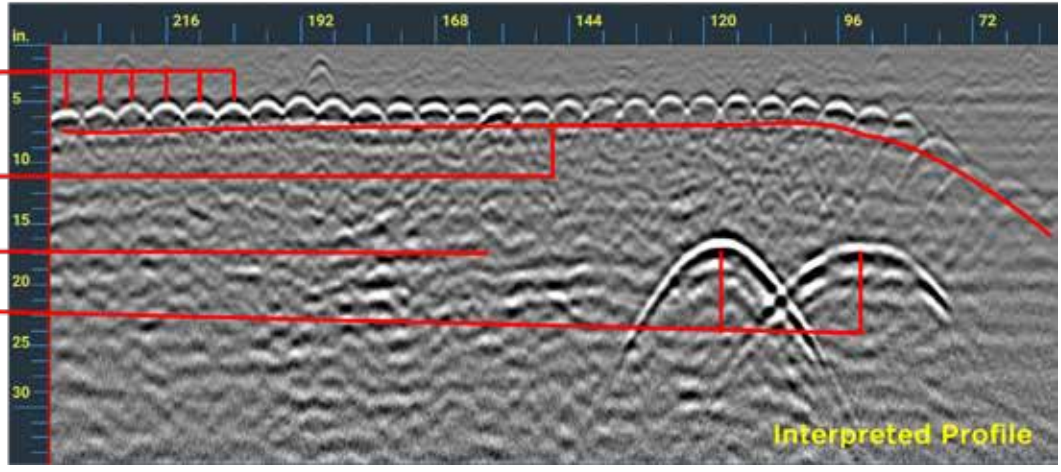


With GSSI concrete scanning equipment, you can resolve the reinforcement and penetrate deep enough to see buried pipes and other targets.

A common slab scenario is wire mesh reinforcement. Wire mesh targets are regularly spaced and are typically closer together than rebar. Each strand of wire creates a target.

In some cases, scanning jobs require more than just identifying what is in the slab. Flex NX and Flex LT let you see what is below the slab, helping to prevent unintentional damage to buried utilities.

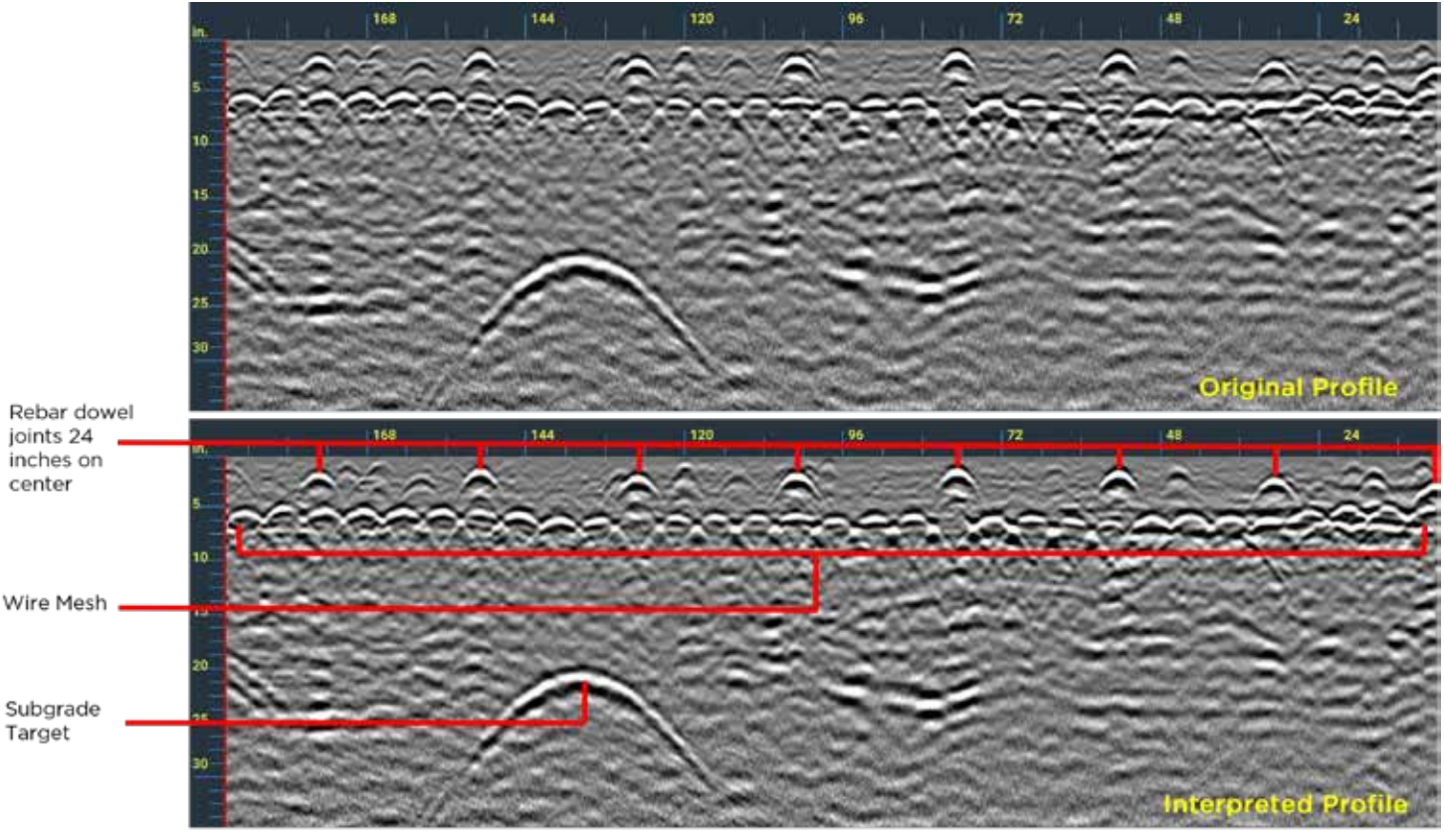




SCANNING SCENARIO #2:
Concrete Slab with Wire Mesh and Rebar Dowel Joints

Rebar dowel joints are installed when a section of slab is removed and a new floating section is poured. This ties the floating section to the original, reinforced slab.

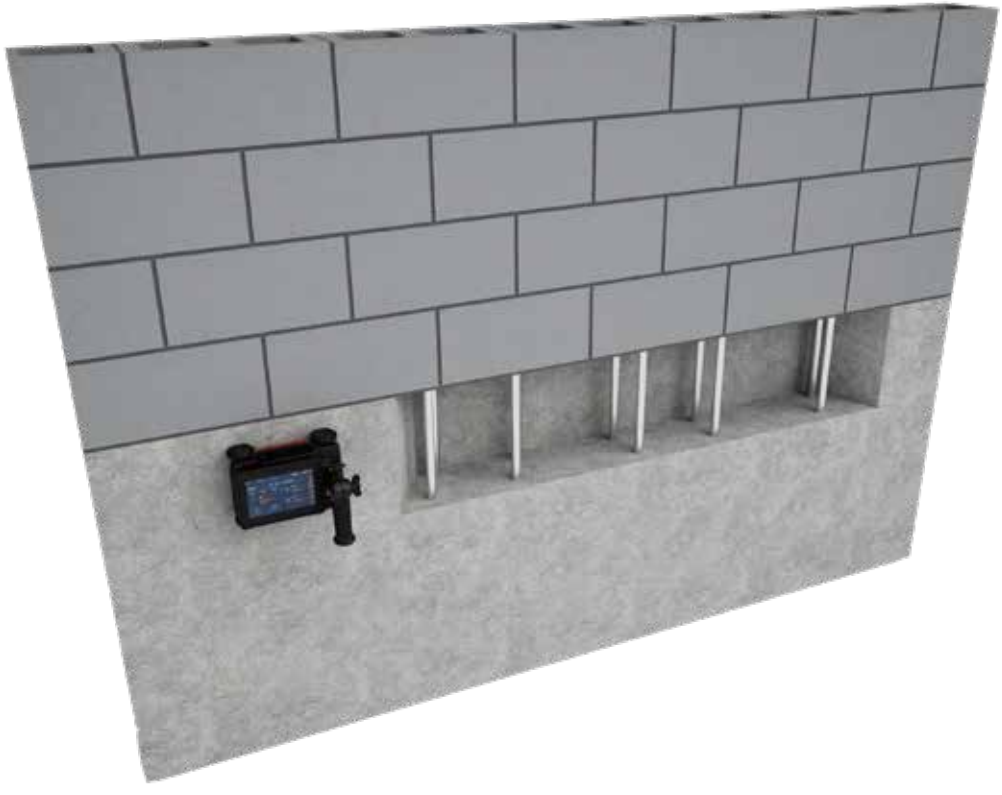
High resolution GPR can distinguish between the mesh and rebar dowel joints. Adding the depth performance of Flex NX and Flex LT ensures that you will also detect targets below the slab.


168
144
120
96
72
48
24
in.
5
10
15
20
25
30
Original Profile
Rebar dowel joints 24 inches on center
Wire Mesh
Subgrade Target
Interpreted Profile

SCANNING SCENARIO #3:
Double Rebar Layer in a Poured Concrete Wall

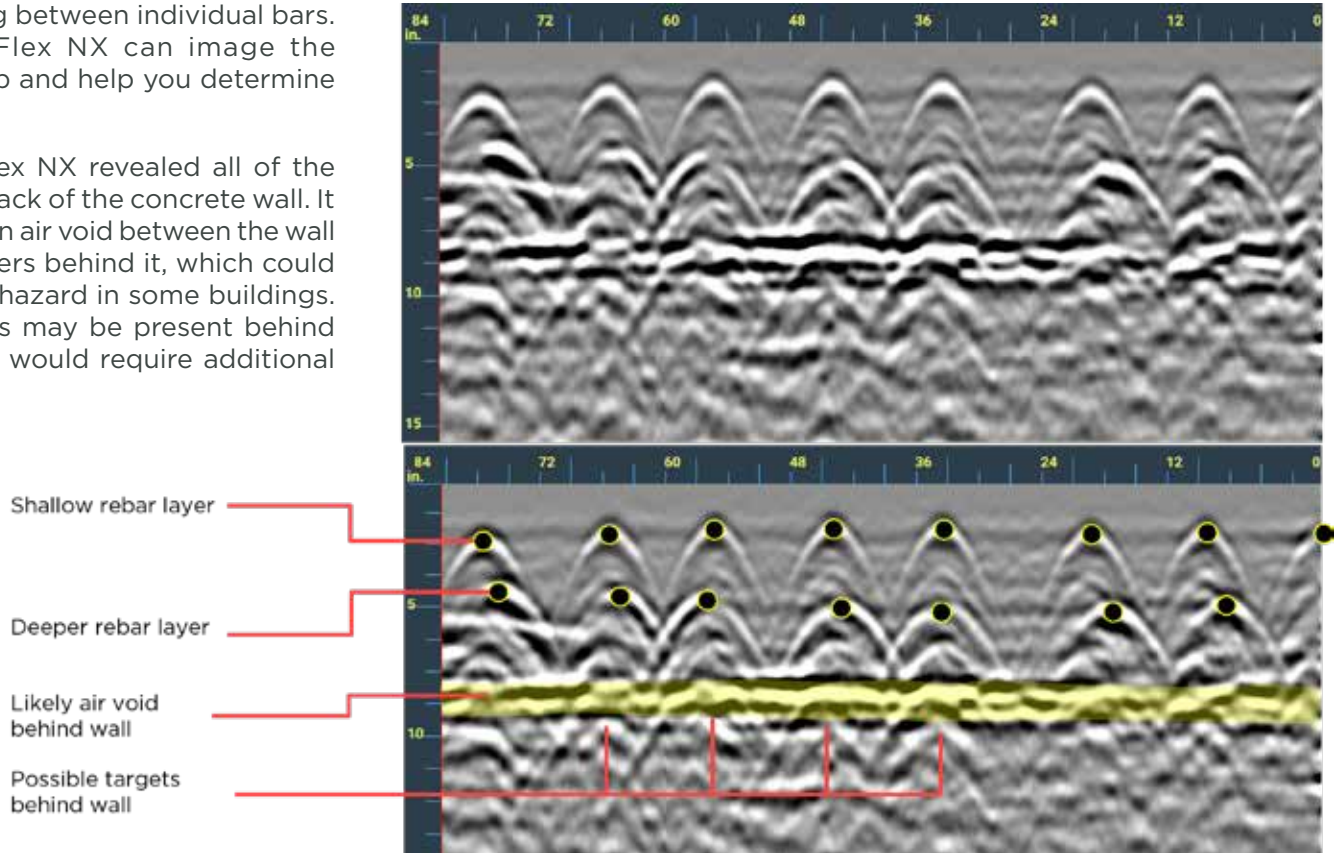
Structural walls must be heavily-reinforced to ensure proper load-bearing capabilities. But what if you are rehabbing a building and want to cut, core, or drill through a reinforced wall?

Flex NX offers the perfect combination of resolution and depth to ensure that each reinforcement target is individually identified, regardless of the wall thickness. In most cases, penetrating behind the wall can show unexpected targets and help you avoid them.

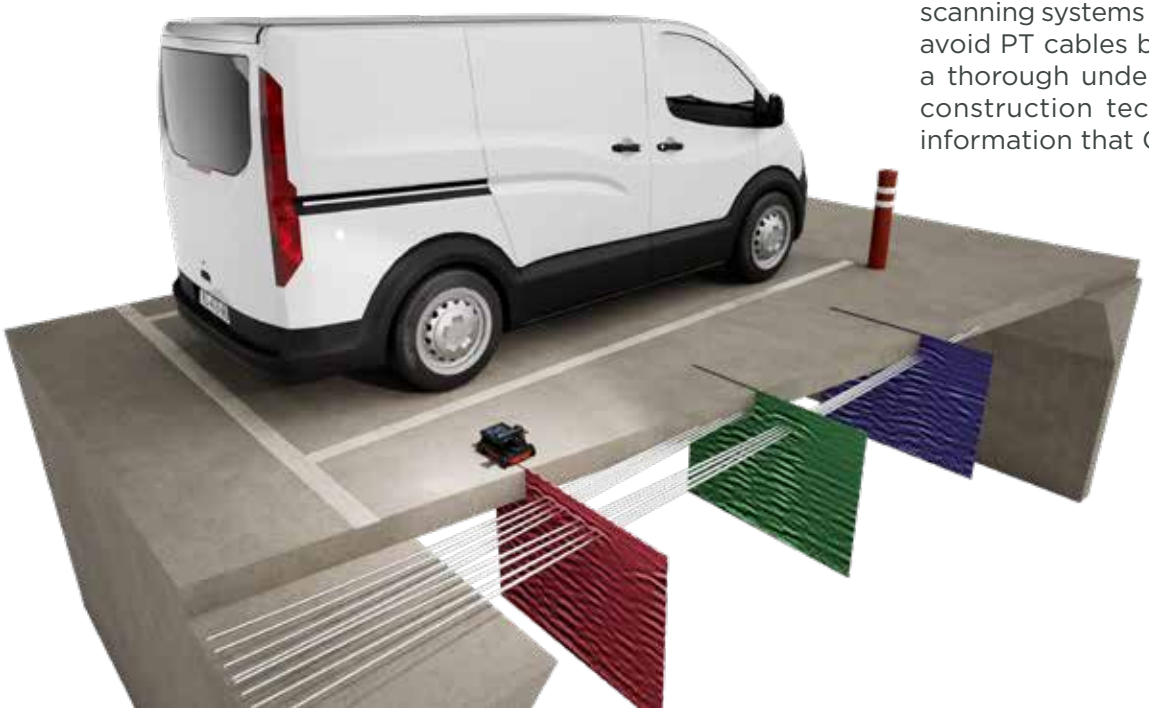


Flex NX can image multiple rebar layers and the spacing between individual bars. Additionally, Flex NX can image the back of the slab and help you determine thickness.

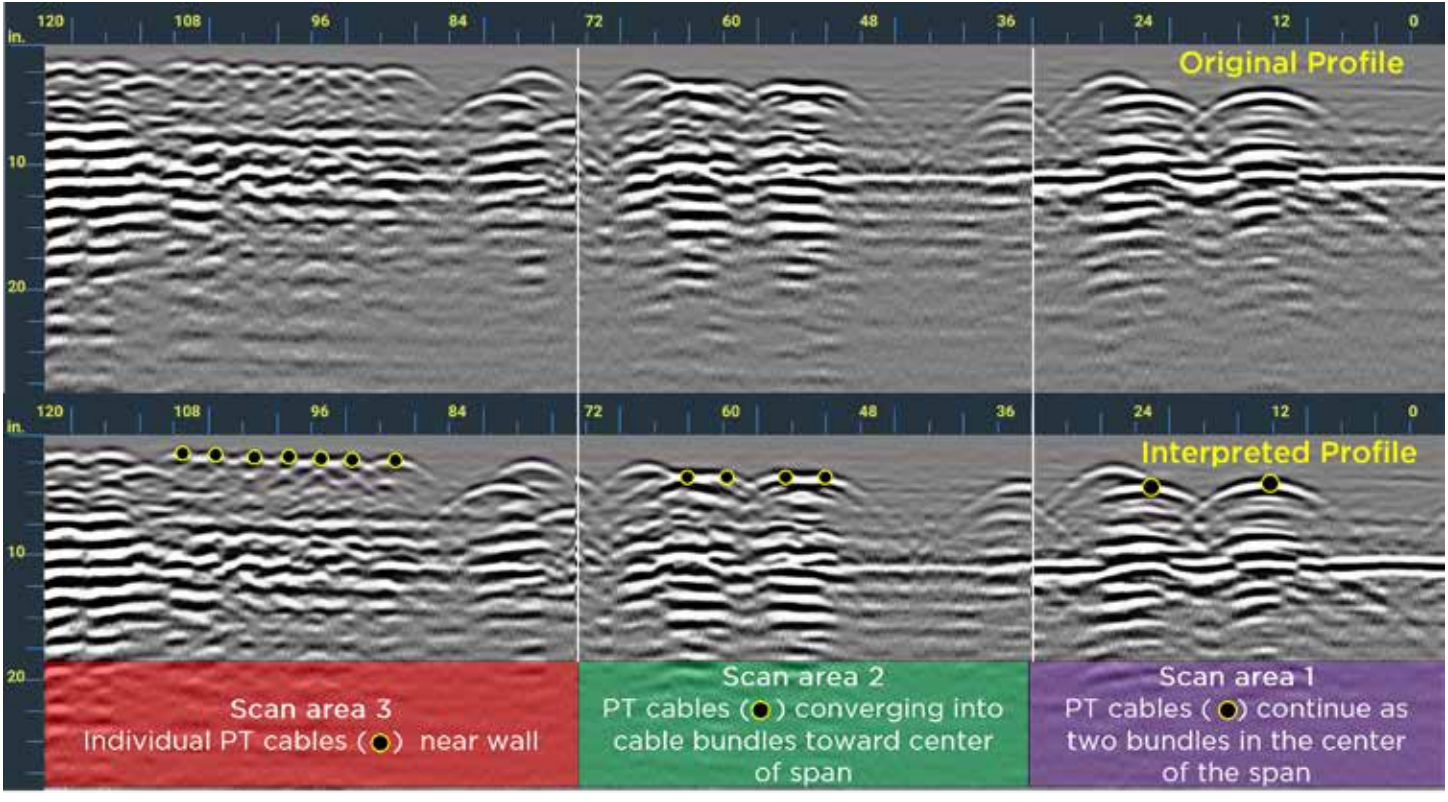
In this case, Flex NX revealed all of the rebar and the back of the concrete wall. It also identified an air void between the wall and the soil layers behind it, which could be a structural hazard in some buildings. Possible targets may be present behind the wall, which would require additional scanning.



SCANNING SCENARIO #4:
Post-Tensioned Cables in a Parking Deck



Use your Flex NX or Flex LT to identify the concrete structures, and their characteristics, for any given jobsite. These concrete scanning systems help you find, identify, and avoid PT cables but it is important to have a thorough understanding of the relevant construction techniques and the unique information that GPR provides.


in.
120
108
96
84
72
60
48
36
24
12
0
10
20
Original Profile
Interpreted Profile
Scan area 3
Individual PT cables ( ) near wall
Scan area 2
PT cables ( ) converging into cable bundles toward center of span
Scan area 1
PT cables ( ) continue as two bundles in the center of the span

SPECIFICATIONS

	Flex NX®	Flex LT®	NX25™	NX15™
Depth range (in ideal conditions)	0-75 cm (0-30 in)	0-75 cm (0-30 in)	0-75 cm (0-30 in)	0-150 cm (0-60 in)
Cross pol scanning capable	One-pass	One-pass	✓	✓
Wireless remote control / viewing	✓		✓	✓
Advanced positioning with Flex Mode	✓			
Marking guides	Lasers	Colored Markers	Skid Plate Indents	Skid Plate Indents
Wireless project export	✓		with Flex NX	with Flex NX
USB project export	✓	✓	with Flex NX/LT	with Flex NX/LT
Onboard file storage	200GB	50GB	N/A	N/A
Ergonomic repositionable handle	✓	✓		
17.8 cm (7 in) High Resolution Touchscreen	✓	✓		
GSSI Fusion™ (.fsn) export	✓	✓	with Flex NX/LT	with Flex NX/LT
Software update via USB	✓	✓	with Flex NX/LT	with Flex NX/LT
Wireless software update			✓	✓
Extension pole compatible	✓	✓	✓	✓
Battery life in hours (commercially available 5Ah)	3	3	5	5
Free software upgrades	✓	✓	✓	✓
Warranty	Two Years	Two Years	Two Years	Two Years
Subscription required	No	No	No	No

TRAINING IS A BIG PART OF WHAT WE DO HERE AT GSSI

3
NUMBER OF FULL TIME TRAINERS

46
YEARS OF EXPERIENCE IN TEAM

100+
NUMBER OF CLASSES, YEARLY

5K
DEDICATED TRAINING SPACE (SQ. FT.)

WHY GSSI

Geophysical Survey Systems, Inc. (GSSI) is a leading manufacturer of ground penetrating radar (GPR) equipment, headquartered in Nashua, New Hampshire. Established in 1970, GSSI pioneered the development of commercial GPR systems. Over the past 55 years, GSSI has consistently led the industry with innovations, including the first digital GPR system and the first high-frequency GPR system specifically designed for concrete scanning.

GSSI's products are utilized worldwide across various sectors, including concrete inspection, utility locating, road and bridge evaluation, geophysics, archaeology, and environmental assessment. Our equipment is renowned for its accuracy, quality, and reliability, providing non-destructive solutions for subsurface exploration and infrastructure inspection.

With a commitment to innovation and customer support, GSSI continues to offer a broad range of GPR equipment, serving clients on all seven continents

NEPAL

PERU

INDONESIA

LET'S TALK ABOUT ALL THE CONCRETE SOLUTIONS!

Whether you're scanning for rebar, post-tension cables, conduits, or voids—GSSI's concrete solutions are built to deliver accuracy, efficiency, and confidence on every jobsite.

Ready to see these products on your jobsite?

- Schedule a demo with us today - sales@geophysical.com
- Call us to talk to a concrete scanning expert - 800.524.3011

Stay connected with us for tips, updates, real-world success stories and things happening at GSSI.

Let us help you select your new GSSI concrete scanning system

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