Let’s Be Practical!
Tips, Tricks and Ideas to Make Field Investigations Better

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Agenda

• Field Investigation Basics
• Think About Safety
• Preparation in the Office
• Your Inspection Bag
• Improving Your Access
• Picture & Video Tips & Tricks
• Keep Your Investigation Organized
• Documenting Your Findings
• Working with Others On Site

Introduction

• This is a pretty broad topic
• Presentation attempts to give my view of it – others may do things differently, and that’s ok
• Hopefully if you are a well seasoned field investigator, you will pick up a few things
• If you are new to getting out of the office and performing field investigations, hopefully you will get a lot out of this presentation
• Presentation covers existing structures but some aspects are applicable to construction
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Field Investigation Basics

- Ahh, isn’t it great to get out of the office!
- But your freedom doesn’t come free
- Time constraints, budget constraints and other factors often create stress – be aware
- Bring your problem solving skills with you
  - Detective work and puzzles await you outside
- Be able to recognize and accept limitations
- Remember – you are often the focus of attention while on site – act accordingly

Think About Safety

- Perhaps one of the THE most critical aspects of a field investigation!
- Everyone wants you to be safe – gone are the days of being reckless and unsafe
- Proper PPE is important
  - Check with the site to see what special precautions are needed for that site
- Get the training you need first
- Use fall protection and other safety equipment when needed – don’t be foolish

Checklists and Permits

- Pre-planning checklists are an important safety and planning tool
  - Complete ahead of time
  - Usually includes a Job Hazard Analysis
  - Helps you identify hazards
  - Promotes good communication within the team and others
  - Identifies rescue plan
  - Helps identify gaps in knowledge

Checklists and Permits

- Use permits such as confined space or rope access permits
  - Required in some situations
  - Usually requires training
  - DO NOT just jump into a hole
  - Permit helps identify danger points and mitigation of the risks
  - Permits generally focus on a specific area or risk
- Lock Out/Tag Out procedures are a form of permits and require training

Lock Out/Tag Out

- Plan ahead to keep your investigation on schedule and avoid delays
- Understand your company and your client’s policies and required training
- LO/TO helps to keep you safe but is often overlooked by inspectors and clients alike
- Don’t feel bad about asking questions
  - It is your life and safety on the line
- If you place a lock or tag – DO NOT forget to remove it when you are done

Preparation in the Office

- A successful investigation begins in the office
- Gather drawings, pictures, previous reports
- Don’t forget to search the web for pictures
- Work with managers for realistic expectations of schedule and budget - are often limited
- Assemble the right team of people
- Don’t forget that pre-planning checklist!
- Understand the end goal of the investigation
  - Rehab construction work? Or just a report?
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Preparation in the Office
- In some cases, perform some basic analysis of the situation in the office to arrive prepared
- Gather equipment that you will need and also that you might reasonably need
  – Be aware of items you need to ship or order from somewhere else, such as air meters or NDT equip.
- If needed, meet with your team ahead of time
  – Discuss both the project work and logistics
- Communicate with your client and the site
  – Address access issues, point of contact, etc

Your Inspection Bag
- Few things ruin an investigation more than missing or inappropriate tools
- Experience does help but thinking the investigation through is smart
- Make sure you have fresh batteries and your equipment is functioning
- If driving to a site – pack extra stuff just in case
- If flying and checking luggage – be aware of airline limits and regulations (weight matters)
  – You may have to buy items when you get there

Your Inspection Bag
- Keep a bag packed with the common tools, supplement with specialized tools
  - First aid kit
  - Camera
  - Quality flashlight
  - Notepads
  - Pens/pencils
  - Tape measure
  - Short ruler
  - Sharpie markers
  - Conc crack gauge
  - Inspection mirror
  - Compass
  - Masons hammer
  - Water
  - Snacks/lunch
  - Lock out tags/locks (if appropriate)
  - Your PPE (hard hat, safety glasses, dust mask, hi-vis vest, ear plugs)

Improving Your Access
- Some areas are just plain tough to get to
- Try to plan ahead of time using site pictures and drawings
  – Sometimes a small change makes a big difference, such as an extra plank or a Davit base for a jib
- Request ladders or bring your own if needed
- Boom lifts are great when available – cost on larger jobs pays for itself in time savings
- Understand, sometimes you only need to get a mirror or a camera to the right spot

My “Camera on a Stick” Trick
- You get to stay clean and safe, let the camera do the dirty work in that nasty hole!
- Most cameras use a 1/4”-20 thread for the tripod mount on the bottom
- Simply use a short piece of all-thread (or a bolt with the head cut off) and a hose clamp to attach the camera to a pole or stick
  – Broom handles, shovels, pieces of rebar, etc
- Don’t forget the screwdriver in your tool box!
- Set your timer and auto flash and snap away

My “Camera on a Stick” Trick
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Picture Taking Tips

• Your camera is a valuable tool
  – Not only used for showing what you are seeing, also good for documentation and notes
• Always get the big picture shots and then zoom in close for the details
• When looking at repetitive things, use your hands to show left/right or numbers
• Auto-focus and auto-flash generally work well but not always – adjust if needed
• Use landscape vs portrait for better report pics

Picture Taking Tips

• Know how to use your camera – practice
• Consider multiple cameras on larger or more remote locations. Each person gets their own.
• Use a short, easily read, ruler in your shot for easy scaling later
• Avoid oblique angles if you want to scale later
• Photograph equipment name plates
• Digital is free and storage is cheap – you can never have too many pics – snap away!
• Bring fully charged batteries and extra ones

Using Video Documentation

• Use video to supplement your pictures
• Helpful to jog your memory later or look at spots you missed getting pictures there
• Long videos should be avoided, take several shorter ones instead
• Uses lots of memory so show some restraint
• Be careful what you say in the video – just the facts! Lawyers love videos.
• Can be useful when you can’t take notes

Keep Your Investigation Organized

• Make life easier on yourself
• Prior to getting deep into your investigation, take a minute to plan your path and stick to it
• Wondering around snapping random pictures makes it tough later to document your work
• Include in your notes your rough path
• Note key observations on drawings or sketches in your notes
• Clean up your notes shortly after you finish the field work

Develop a Simple Inspection Form

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Poor condition</td>
<td>Poorly maintained</td>
</tr>
<tr>
<td>Fair</td>
<td>Fair condition</td>
<td>Moderately maintained</td>
</tr>
<tr>
<td>Good</td>
<td>Good condition</td>
<td>Well maintained</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>Any safety hazards or obstructions to be identified</td>
</tr>
<tr>
<td>Structural</td>
<td>Structural damage or significant structural issues</td>
</tr>
<tr>
<td>Equipment</td>
<td>Equipment not in proper working condition</td>
</tr>
</tbody>
</table>

Documenting Your Findings

• The best field work is worthless if you can’t communicate your finding to others
• Don’t forget your audience!
• Make sure you understand the expectations of your client prior to performing investigation
  – Documentation is different if they want a large report versus if a simple memo is expected
• Be careful and confident when reporting your findings, especially when writing them down
  – Answer the question asked but don’t overstep
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Working with Others On Site

- Have a contact on site and expect delays
- Leave any bad attitudes at the gate
- Understand the roles others play on site
  - Contractors, Owners, etc see things differently
- Be aware of other work being performed and coordinate – you may have to alter your plans
- Be careful of what you say regarding your findings if you aren’t positive yet
  - Everyone seems to remember what the Engineer said while on site and don’t always see the report

Good Communication is Important

- Communicate....
  - Before you get on site with the client, etc
  - When you first get on site to catch any last minute changes or problems
  - During your investigation with those around you
  - With your team to be safe and correctly document the investigation
  - Hold a wrap-up meeting prior to leaving site with client
  - During the documentation phase to avoid disappointment

Some Concluding Thoughts

- Field investigations can be fun hard work
- Safety is a priority for many reasons!
- What you do in the office ahead of time directly impacts your field work
- Your tool bag should have some consistent items in it along with some specialized ones
- Good access will help you see the issue up close so think of ways to safely improve it
- Good pictures and videos help documentation

Some More Concluding Thoughts

- Keep your investigation organized for efficiency and so you don’t miss something big
- Know what kind of reporting you need to do before you start your field work
- Use pictures and video documentation to help you later remember the fine details of a trip
- Keep a professional but fun attitude while on site – it will help
- A good site investigation can lead to more work, a bad one could mean disaster

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Thanks!
Any Quick Questions?

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