

CONSTRUCTION INSPECTION

Gerald Whiteside

CET Lebanon Technical Office

Craig Krotzer

CET Somerset Technical Office

QUALITY ASSURANCE VS QUALITY CONTROL

QA and QC are defined in the
National Engineering Manual 512.31

QA- Quality Assurance

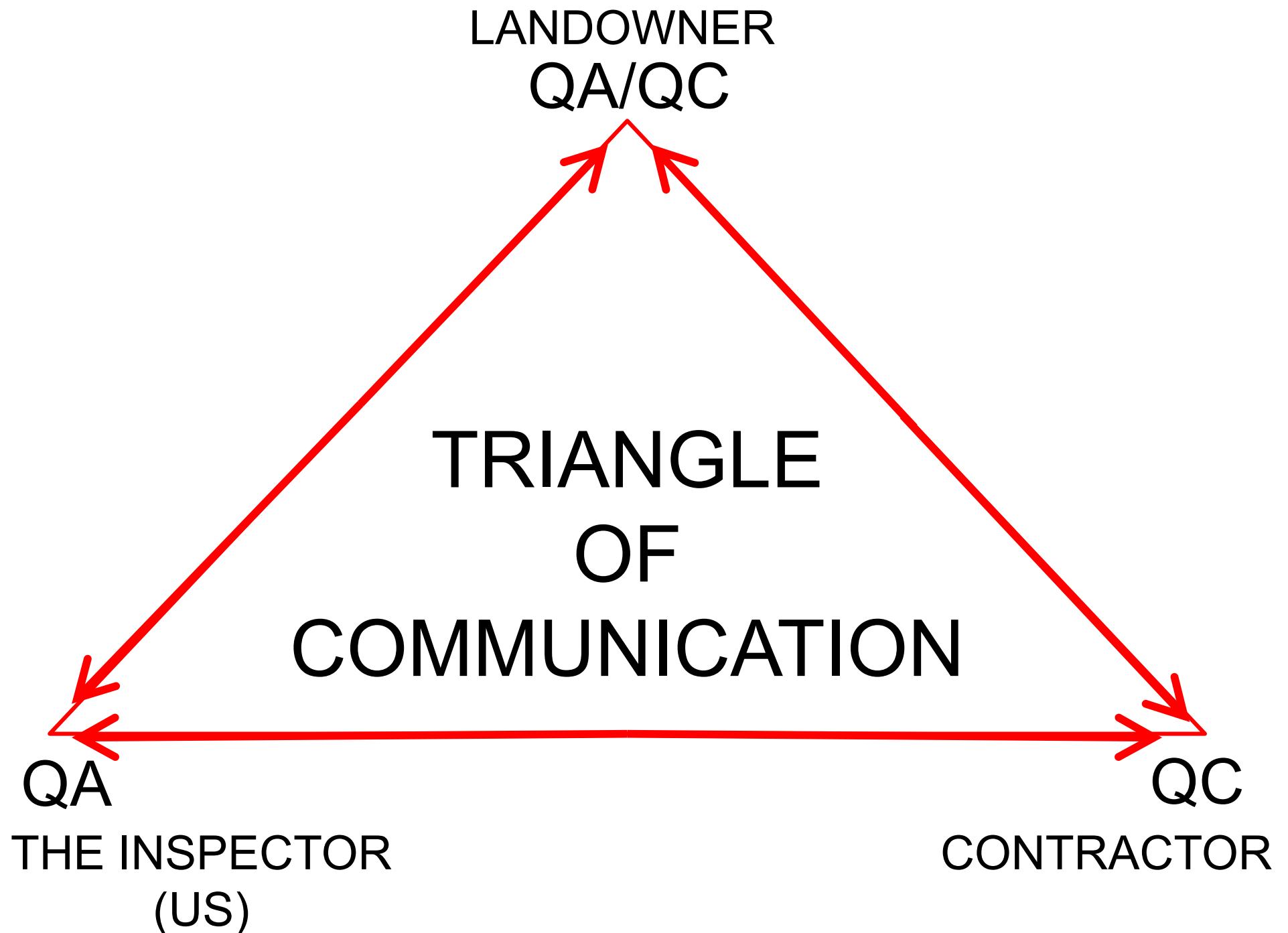
- Activities performed by or for the owner including: observing construction methods and procedures, reviewing quality control testing activities of the contractor. Conducting material testing to evaluate contractor's quality control system, and other measures to ensure compliance with the contract provisions. The duties and responsibilities are outlined in a quality assurance plan for this specific project being installed.

Ex: Doing a concrete slump test

QC-Quality Control

- Activities performed by the contractor to document that the work installed meets the minimum requirements of the contract. On less formalized construction activities, the contractor's quality control responsibilities shall be outlined in the construction specifications or contract, where applicable.

Ex: Ensuring the proper concrete mix, slump and handling procedures



Goals of People Involved

NRCS / QA Inspector Goals

- Quality construction
- Better environment
- Meet the design & specifications
- Satisfied landowner

Landowner Goals

- Time efficiency
- Economics
- Benefit the Environment
- Improve Animal Health

Contractor Goals

- Earn money
- Complete work on time
- Quality work

RESPONSIBILITIES

Landowner's Responsibilities

- Understand The Project,
Design & Contract
- Effects on farming operation
- They should monitor construction
- They have authority to stop work

Contractor's Responsibilities

Install the project by:

- Providing labor, equipment & know how
- Supplying materials & certifications
- Performing required tests
- Identifying needed changes

Agencies' Responsibilities

Assist Landowner & Contractor by:

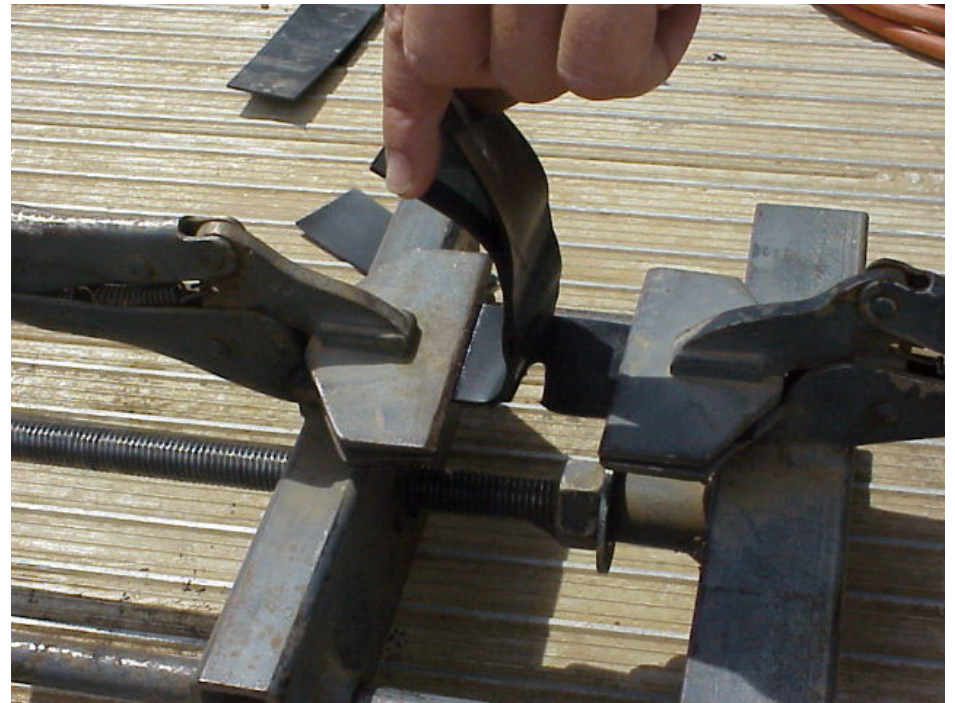
- Providing design drawings & specs
- Conducting Pre-Construction meeting
- Explaining design drawings & specs
- Performing construction inspections & tests
- Identifying problems & providing solutions
- Conducting final checks & as-builts
- Certifying completion of the project

KEEPING OPEN LINES OF COMMUNICATION

Quality Assurance Plan

- Defines the QA responsibilities
- Key Components:
 - General description of project
 - Items requiring inspection
 - Timing of inspections
 - Critical or Different components
 - Support of supervisor or engineer
 - Backup inspector
 - Contact info.

QA vs QC



QA or QC?



Inexperienced Inspector vs Experienced Contractor

Construction Inspection

- Know the Design and Specifications
 - Review Design & Check Data Requirements
- Visit Often and at Right Times
 - Short visits normally adequate
- Observe construction methods
 - perform tests to determine that the construction meets specification
- Be an Active Participant
 - Ask questions

Before Going To Job Site

- Study Design And Specifications
 - Questions?
 - Ask designer/planner
 - Know project better than contractor
- What will be happening on site today?
 - Specific details
 - Think about what you need to know
 - Consider experience from past jobs

- Anticipate Problem Areas
 - Address Them Before they Happen
 - What will be happening at the site today?
 - Example: Hot & Cold Weather Concreting
 - Ask the right questions
- Don't need to know all answers
 - Just where to find them
 - Contact your technical support specialists
 - Call from the job site
 - Keep applicable phone #'s in your cell
 - Be honest, if you don't know say so

- Keep landowner involved
- Respect contractor and landowner
 - Consider their ideas and suggestions
 - They may have a lot of experience
- Don't commit to changes too quickly
 - Will the change meet the Practice Standard and Construction Specification
 - Will it meet the landowner's objectives
 - Will it meet the intent/goals of the project
 - Coordinate with planner and designer
 - Contract Issues

Work Within Guidelines of the Construction Specifications

- Concrete Projects
 - Adding water
 - Vibrating
 - Super plasticizer
 - Steel (size and location)
 - Curing
 - Temperature

Work Within Guidelines of Specs

- Excavation Project
 - Foundation
 - Compaction
 - Shape, Top Width, Depth
 - Backfill
 - Drainage

**** SAFE EXCAVATION**

DOCUMENTATION

Keep Good Construction Notes

- Job Diary, Con 6 Notes, on the Design
- Who was there and When
- Who was the Excavator/Contractor
- Problems or Changes During Construction
- Confirm that the implementation meets the Design, Standard and the Specifications

QUESTIONS ?

COMMENTS