Level I Practice Analysis

Level I – Technician Trainee

The candidate for NICET certification at Level I in Transportation Construction Inspection should have the knowledge and experience to:

Follow simple technical instructions from, provide assistance to, and learn inspection procedures and responsibilities from more experienced transportation construction inspectors and engineers.

1.1 Plans and Specifications
1.1.1 Recognize and use standard construction terminology.
1.1.2 Identify purposes and roles of various project documents.
1.1.3 Match locations on plans to locations on the site.
1.1.4 Locate and understand information on project drawings.
1.1.5 Identify project documents that specify types of project work.
1.1.6 Locate information in agency/owner standards and specifications.

1.2 Measurement and Surveys
1.2.1 Identify and use U.S. Customary and Metric units of measure for length, area, volume, weight, mass, temperature, pressure, and strength, and convert one U.S. Customary unit to another, or one Metric unit to another.
1.2.2 Perform arithmetic calculations, and calculate areas and volumes of simple geometric shapes, including maintaining the correct precision.
1.2.3 Measure dimensions and compare with plans and specifications.
1.2.4 Identify survey stakes and markers, and interpret notation.
1.2.5 Use drawing scales to determine distances.

1.3 Tools and Equipment
1.3.1 Identify tools and equipment used by inspectors for inspections, testing, and reporting.
1.3.2 Identify tools and equipment used by surveyors.
1.3.3 Identify tools and equipment used in construction.
1.4 **Personal Safety**
   1.4.1 Use appropriate personal protective equipment (PPE) for the construction site.
   1.4.2 Identify and report potential safety hazards.
   1.4.3 Identify sources of safety information and requirements.

1.5 **Site Operations**
   1.5.1 Identify components of work zone traffic control.
   1.5.2 Identify construction activities.
   1.5.3 Identify, and verify the presence of, erosion and sediment control components.
   1.5.4 Identify, and verify the presence of, types of utility markings.
   1.5.5 Document daily activities.
Level II Practice Analysis

Level II – Associate Engineering Technician

The candidate for NICET certification at Level II in Transportation Construction Inspection should have the knowledge and experience to:

Inspect construction of basic earthwork, pavement, structural components, and incidentals; verify simple field testing for material properties; interpret documented characteristics of objects and materials; recognize unsafe construction procedures and site conditions; inspect erosion control and protection of environmental features and utilities; identify observed, measured, or tested properties and provide appropriate notifications and reports.

2.1 Earthwork

2.1.1 Visually identify soil and aggregate types and their properties.
2.1.2 Identify and differentiate between limits of disturbance, rights-of-way, and easements.
2.1.3 Inspect clearing and grubbing.
2.1.4 Inspect temporary erosion and sediment controls and storm water management components.
2.1.5 Recognize materials testing, certification, and acceptance requirements.
2.1.6 Monitor field procedures for soils compaction testing, and determine the acceptability of the results.
2.1.7 Inspect placement and grading of embankments, including compaction and finish tolerances.
2.1.8 Inspect placement and grading of subgrades, undercuts, and aggregate subbase and base courses, including compaction and finish tolerances.
2.1.9 Calculate excavation and embankment quantities.

2.2 Asphalt Pavement Construction

2.2.1 Inspect existing surface preparation as required.
2.2.2 Inspect the application of tack coats.
2.2.3 Conduct preplacement inspection, including grade control, equipment pre-checks, and paving plan review.
2.2.4 Visually identify asphalt mixes and properties.
2.2.5 Identify the requirements for materials sampling for testing and verify conformance.
2.2.6 Inspect delivery, placement, compaction, and finishing of asphalt.
2.2.7 Calculate and interpret yield.
2.3 Concrete Pavement Construction
2.3.1 Inspect surface preparation, forms, reinforcing steel, and load-transfer assemblies for pavements.
2.3.2 Verify that concrete for pavement meets testing and certification requirements.
2.3.3 Verify that correct procedures are followed for sampling fresh concrete; measuring temperature; determining slump, air content, unit weight, and yield; and making and curing test specimens.
2.3.4 Inspect delivery, placement, and consolidation of concrete for pavements.
2.3.5 Inspect finishing and surface tolerances.
2.3.6 Inspect pavement curing, and saw-cutting and sealing of joints.

2.4 Concrete Structure Construction
2.4.1 Inspect delivered precast box culverts, box beams, and other precast items.
2.4.2 Inspect bedding and installation of footings and basic driven pile.
2.4.3 Inspect forms and reinforcing steel for structures, and calculate pay weight.
2.4.4 Inspect delivery and method of placement of concrete for structures.
2.4.5 Inspect cast-in-place structural components.
2.4.6 Verify that concrete for structures meets testing and certification requirements.

2.5 Drainage
2.5.1 Identify drainage system components.
2.5.2 Inspect excavation for drainage.
2.5.3 Inspect bedding and backfilling.
2.5.4 Inspect installation of drainage components.

2.6 Utilities and Incidental Construction
2.6.1 Identify utility facilities affected by construction.
2.6.2 Inspect signage, striping, and message marking.
2.6.3 Inspect guardrails, safety systems, and fencing.
2.6.4 Inspect basic foundations for lighting, traffic signals, ground-mounted signs, and sound walls.
2.6.5 Inspect underground electrical conduit.
2.6.6 Inspect sidewalks, curbs and gutters, curb ramps, medians/median barriers, and driveways.
2.6.7 Inspect landscaping and environmental mitigation.
2.7 Site Layout and Controls
2.7.1 Use survey notes and data to verify elevations.
2.7.2 Inspect placement of work zone traffic controls, including lane shifts, closures, detours, and construction access points and routes.

2.8 Responsibilities and Documentation
2.8.1 Generate and maintain project documentation related to work within the inspector’s scope of responsibility.
2.8.2 Identify project roles, hierarchies, and responsibilities, including the authority of the inspector.
2.8.3 Identify project activities from a project schedule.
2.8.4 Identify and inspect required work-site postings.