PUBLIC WORKS CERTIFICATION BOARD

POLICY

MARCH 15, 2018
PREFACE
This policy was approved by the ASTTBC Council on March 15, 2018 and is issued to the Public Works Certification Board (PWCB) to serve as the policy and criteria for setting certification standards, processing applications for certification and registration of Registered Public Works Technicians (RPWT) and Certified Public Works Inspectors (CPWI).

This revision of the PWCB policy supersedes all previous revisions to the Public Works Inspection Certification Board policy as approved by ASTTBC Council.

DISCLAIMER
ASTTBC Directors, employees, officers, volunteers and the duly appointed members of the Public Works Certification Board (PWCB) are responsible for administering the policy and procedures. Granting of ASTTBC certification to an individual infers that the individual has satisfied the requirements and minimum standards described in this policy.

ASTTBC does not accept liability for any errors or omissions that may arise as a result of the services or work performed by an individual certified by the ASTTBC PWCB or for the consequences of any actions taken by registered members. No legal proceeding for damages may be commenced or maintained against the Directors, employees, officers or volunteers of the association because of anything done or omitted in the performance or intended performance of any duty under the ASTT Act and Regulations, or in the exercise or intended exercise of any power under that Act and Regulations.

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www.asttbc.org

CHRONOLOGY OF POLICY REVISIONS
February 15, 1995: Original approved by Council
February 15, 1999: Minor revision
March 7, 2002: Minor revision
March 13, 2003: Minor revision
January 31, 2004: Minor revision
January 31, 2005: Revisions to 5.1 and 9.0
February 15, 2007: Revisions to 12.0 and 13.0
September 28, 2013: Minor revision
March 15, 2018: Major revision integrating PWI and RPWT
# Public Works Certification Board Policy

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1.0 Authority of the Certification Board

1.1 Authority to Certify and Register

1.1.1 The ASTT Act and Regulations, R.S.B.C. 1996, c.15, specifies that ASTTBC has the authority to certify and register as Technical Specialists those individuals that achieve the certification standards and criteria set by the respective Certification Boards and approved by ASTTBC Council.

1.1.2 The ASTTBC Council has authorized staff and the Public Works Certification Board (PWCB) to administer the process of establishing standards, assessing individual applicants and issuing a certificate of registration to individuals that achieve the standards and criteria specified in this policy.

1.2 Function of the Public Works Certification Board (PWCB)

The function of the PWCB is to:

a) Submit for Council approval the certification criteria and standards for various categories of RPWTs and CPWIs.

b) Certify individuals that have applied for Technical Specialist certification as a Registered Public Works Technician (RPWT) or as a Certified Public Works Inspector (CPWI).

c) Recommend qualified individuals to be File Reviewers or Quality Assurance Specialists.

d) Recommend to the ASTTBC Accreditation Board the names of individuals to participate on accreditation teams and to receive accreditation reports from the accreditation audit team for training programs leading to RPWT or CPWI.

e) Submit to the ASTTBC Council the names of Individuals recommended to be appointed to the PWCB.

f) Recommend to Council any Changes in the PWCB policy.

g) Recommend changes to Standards of Practice and other matters related to the practice of RPWTs and CPWIs.

1.3 Composition of the PWCB

1.3.1 The PWCB shall consist of a minimum of 6 and maximum of 12 people appointed annually by Council.

1.3.2 The members of the PWCB shall have experience commensurate with their appointment. A minimum of half the members shall be CPWIs and a minimum of two RPWTs or individuals with experience and competencies commensurate with RPWT certification requirements. A minimum of one community representative external to ASTTBC shall be appointed.

1.3.3 Members of the Board shall be recruited and appointed in accordance with the ASTTBC Terms of Office for Board Members.

1.3.4 All members of the Board shall have equal voting rights.

1.3.5 The Registrar or designate shall act as Secretary to the PWCB and is responsible for the proper and appropriate application of the policy by the Board.
1.4 Responsibilities of the PWCB

1.4.1 The PWCB when evaluating applications for certification may:
   a) Approve an application for certification or;
   b) Refuse an application for certification or;
   c) Defer the approval of the application.

1.4.2 The PWCB may, at its discretion, require an applicant:
   a) To pass one or more examinations;
   b) To provide evidence of having achieved the competencies specified for the relevant
designation as described in Appendix 1 or 2.
   c) To improve competencies by pursuing further education or training, self-study,
      mentorship, field training, supervised on-the-job work experience or any other means
      acceptable to the Board.

1.4.3 The PWCB shall have the authority to endorse File Reviewers to evaluate applications for
certification based on the standards and criteria established by the PWCB.

1.4.4 The PWCB may select and request one or more third party individuals to confirm or
validate information submitted by an applicant and or referees named in the application.

1.4.5 The Registrar shall send written notice to the applicant advising of the PWCB decision.
The reasons for the decision shall be included in the written notice to the applicant.

1.4.6 The PWCB shall regularly review its policies and methods and recommend changes to
ASTTBC Council.

1.4.7 The PWCB is responsible for the quality, consistency and timeliness of evaluations and
recommendations made by File Reviewers.

1.5 Meetings and Quorum

1.5.1 The PWCB shall meet at such times, at such places and by any means including
electronic conferencing as may be deemed necessary.

1.5.2 The minimum number of PWCB members present for a quorum is fifty percent of the
members appointed by Council. Attendance may be in-person in the meeting room or by
electronic conferencing.

1.5.3 Any PWCB member that is absent without reasonable cause for three meetings in a
calendar year shall be requested to resign from the Board.

1.5.4 PWCB decisions shall require a simple majority of the members present at the time of the
vote. In case of a tie vote, the Chair shall have the deciding vote.

1.5.5 The Chair shall invite any guest required to be present at a PWCB meeting. Guests of the
Chair shall attend only for matters for which they are required and shall not vote. Guests shall
be required to sign the confidentiality agreement and adhere to the ASTTBC confidentiality
policy.

1.6 Expenses

1.6.1 Pre-approved authorized travel, subsistence, and meeting expenses for members of the
PWCB shall be reimbursed in accordance with ASTTBC financial policy.
2.0 Public Works Profiles and Certification Categories

2.1 Public Works Profiles

2.1.1 A Registered Public Works Technician (RPWT) typically works under the supervision of senior public works department staff or professionals to assist in providing day-to-day services that include monitoring, adjusting, repairing and servicing water systems, roads, sidewalks, parks and buildings.

2.1.2 A Certified Public Works Inspector-One (CPWI-1) working under the direct supervision of a more experienced CPWI will typically assist senior staff in overall project inspection by performing routine tasks such as preparing and maintaining records, reports and other materials related to the inspection of public works projects. Certification as a CPWI-1 requires a minimum of two years work experience assisting in public works inspections.

2.1.3 A Certified Public Works Inspector-Two (CPWI-2) generally works under minimal supervision to perform quality control inspections encompassing various utilities and types of construction works and may be responsible for compiling pertinent data and maintaining accurate records to be used in the preparation of estimates, progress reports and as-constructed plans. A CPWI-2 reviews materials, prepares test reports and is able to recommend acceptance or rejection of materials and workmanship. Responsibilities may include public relations, liaison, and coordination. A CPWI-2 exercises sound judgment and has knowledge of government regulations, plans, specifications and policies. Certification as a CPWI-2 requires a minimum of five years work experience in public works inspection.

2.1.4 A Certified Public Works Inspector-Three (CPWI-3) may schedule, supervise and train other inspection staff. A CPWI-3 is typically responsible for contract management including progress estimates, comprehensive reports, negotiations and resolution of construction problems. A CPWI-3 has current knowledge on government regulations, plans, specifications and policies pertaining to a wide range of public works projects. Certification as a CPWI-3 requires a minimum of ten years work experience in public works inspection.

CERTIFICATION CATEGORIES

2.2 Provisional Registered Public Works Technician (RPWT (Provisional))

2.2.1 A Provisional Registered Public Works Technician (RPWT (Provisional)) is an applicant that has completed an ASTTBC recognized post-secondary education program based on the occupational competencies described in Appendix 1.

2.2.2 RPWT (Provisional) members have a maximum of five years to achieve the requirements for reclassification to full RPWT certification. Failure to reclassify within the allocated time shall result in cancellation of membership.

2.3 Registered Public Works Technician (RPWT)

2.3.1 A RPWT is an applicant that has successfully completed an ASTTBC recognized post-secondary education program based on the occupational competencies described in Appendix 1. In addition to the education requirement, a minimum of 2,000 hours (typically 1 year full-time) of supervised work experience in public works functions is required. The hours of public works-related supervised work experience completed during a cooperative education program may be included as valid work experience. Applicants with relevant work experience in public works functions before their post-secondary education program may include a maximum of 1,000 hours (typically 6 months full-time) towards the work experience requirement.
2.3.2 The ASTTBC online work log shall be used to document the work experience. The name, position and contact information of the supervisor shall be included for each entry in the log.

2.4 Certified Public Works Inspector - One (CPWI-1)

2.4.1 A CPWI-1 is an applicant that has successfully completed an ASTTBC recognized post-secondary education program based on the occupational competencies described in Appendix 2. In addition to the education requirement, a minimum of 4,000 hours (2 years full-time) work experience doing inspection-related duties is required.

2.4.2 A CPWI-1 typically performs routine inspection or testing procedures with occasional supervision and assumes responsibility for decisions within established guidelines.

2.4.3 The ASTTBC online work log shall be used to document the work experience. The name, position and contact information of the supervisor shall be included for each entry in the log.

2.5 Certified Public Works Inspector - Two (CPWI-2)

2.5.1 A CPWI-2 is an applicant that has successfully completed the education requirements for CPWI-1. In addition to the education requirement, a minimum of five years inspection experience demonstrating a progressive increase in responsibility is required.

2.5.2 A CPWI-2 performs direct control of public works projects, resolves in-field problems based on contract documents, plans bylaws and specifications. Working under limited supervision, the CPWI-2 may supervise others and makes frequent decisions while assuming responsibility for decisions within documents and specifications.

2.5.3 The ASTTBC online work log shall be used to document the work experience. The name, position and contact information of the supervisor shall be included for each entry in the log.

2.6 Certified Public Works Inspector - Three (CPWI-3)

2.6.1 A CPWI-3 is an applicant that has successfully completed the education requirements for CPWI-2. In addition to the education requirement, a minimum of ten years inspection experience demonstrating an increase in responsibility is required.

2.6.2 A CPWI-3 supervises technically complex projects, makes independent decision on work methods and procedures within an overall guideline. Participates in contract management, cost control, claims assessment, usually supervises others and may assist in staff training.

2.6.3 The ASTTBC online work log shall be used to document the work experience. The name, position and contact information of the supervisor shall be included for each entry in the log.

2.7 Retired

2.7.1 A RPWT or CPWI in good standing that satisfies the criteria of the ASTTBC Retired Member Policy may reclassify to RPWT (Retired) or CPWI (Retired).
3.0 Application Requirements and Certification Criteria

3.1 Basic Requirements

3.1.1 To be certified and registered with ASTTBC the applicant must be a Canadian citizen or permanent resident or have a valid visa to live and work in Canada. Two pieces of government issued identification (ID) are required of which at least one piece shall be a photo ID.

3.1.2 Proof of secondary school graduation or equivalent.

3.1.3 Achieve a minimum result of level 7 for speaking, listening, reading and writing on the Canadian Language Benchmarks (CLB) exit test of English competency. Other recognized standard tests of English competency such as TOEFL or IELTS may be considered at the discretion of the PWCB.

3.1.4 Applicants with previous or current criminal record for which no pardon has been issued must write a confidential letter to the Registrar explaining past or outstanding criminal offences. ASTTBC reserves the right to request an applicant to provide, at the applicant’s cost, a criminal records check. An applicant refusing to submit a criminal record check, if requested, shall explain in writing to the Registrar the reasons for refusal. The matter shall be submitted to the Practice Review Board (PRB).

3.1.5 Successful completion of the online ASTTBC Professional Practices and Ethics (PP&E) exam is required.

3.1.6 Applicants shall submit the non-refundable application fee. Applicants are responsible for costs such as photographs, transcripts, official translation of documents, and other expenses that may be incurred to prepare and submit applications.

3.1.7 Applicants are required to comply with the ASTBC Code of Ethics and the PWCB policy effective the date an application for certification and registration has been submitted.

3.2 Application Process

3.2.1 Any individual seeking certification shall initiate the application process by registering online at [www.asttbc.org](http://www.asttbc.org). Applicants are required to record their relevant work experience by entering the information in the online work log.

3.2.2 Applicants shall provide the names, designations and contact information for a minimum of three referees. The referees shall be able to comment on and validate the claimed occupational competencies, work history and character of the applicant. Applicants shall include their immediate supervisor or manager as one of the referees.

3.2.3 A self-employed applicant may request references from alternate referees acceptable to the PWCB.

3.3 Occupational Competency Requirements

3.3.1 Certification will be granted based on achievement of competencies shown in Appendix 1 for RPWT or Appendix 2 for CPWI.

3.3.2 Satisfactory achievement of a competency requires the applicant to demonstrate or provide evidence that they have achieved the majority of the performance indicators describing each competency claimed by the applicant.
3.3.3 Achievement of occupational competencies shall be validated by two or more of the following methods:

1. Declaration by a minimum of two PWCB-approved referees that the applicant has demonstrated the claimed competencies and has the required work experience.
2. Assessment of the online work log by File Reviewers and the PWCB.
3. Practical assessment of the applicant’s competencies in the workplace setting by a PWCB-approved File Reviewer or Quality Assurance Specialist.
4. Structured interview, examinations or any other assessment strategies as requested by the PWCB (as per 1.4.2).

3.4 Work Experience Requirements

3.4.1 In addition to demonstrated achievement of competencies (as per 3.3), applicants must complete and record in their online work log the required minimum hours of work experience for their respective designation and category as described in 2.0 Public Works Profiles and Certification Categories.

3.5 Applications in Abeyance

3.5.1 An application will be put into abeyance if the applicant has failed to meet application completion requirements within two years of submitting the application.

3.5.2 The Registrar shall notify affected applicants of the status of their file and permit a request for file reactivation provided that the applicant satisfies the Registrar that the outstanding application requirements will be fulfilled within a period of six months. Failure to submit to the Registrar a written request for an extension or to meet the six-month extension requirement will result in the application being put into permanent abeyance. Applications put into permanent abeyance will require an applicant to re-submit a new application should they wish to apply at a future time.

3.5.3 The Registrar shall notify applicants in writing of the pending termination of their application including forfeiture of the non-refundable application fee.

3.6 Right to Appeal

3.6.1 Within 30 days of notification of the classification approved by the PWCB, an applicant may appeal the decision of the PWCB by submitting a written request to the Registrar. The Registrar shall initiate a second review of the file by one or more alternate File Reviewers. The recommendations of the alternate file reviewers along with any additional information provided by the applicant will be presented to the PWCB for their decision to either uphold the original evaluation or to amend their decision and adjust the certification granted.

3.6.2 Within 30 days of receiving the results of the first level appeal the applicant may submit a final appeal in writing to the Registrar requesting the ASTTBC Council to review the application. The written request for an appeal to Council shall include the reasons why the Council should hear the appeal and shall be processed as per section 4.9 of the ASTT Regulations.
4.0 Conditions for Continued Registration

4.1 Continuing Professional Development (CPD)

4.1.1 The ASTTBC Continuing Professional Development (CPD) policy applies to RPWT and CPWI members in all certification categories.

4.2 Practice Assessment Review (PAR)

4.2.1 The ASTTBC PAR Policy applies to RPWT and CPWI members in all certification categories.

4.3 Cancellation and Re-Instatement of Certification

4.3.1 The PWCB shall initiate a process to cancel certification and registration if the certification was made in error, or under false pretenses.

4.3.2 The PRB may suspend RPWT or CPWI certification and registration due to a breach in the ASTTBC Code of Ethics and Practice Guidelines.

4.3.3 A former RPWT or CPWI that has been cancelled or removed from the Register for two or more consecutive years from the date of cancellation shall:

a) Complete an online application for reinstatement.

b) Pay the reinstatement fee as specified in the ASTTBC fee policy.

c) Submit an up-dated resume that includes details of professional development and work history since the original registration was granted.

d) Provide contact information for 3 referees.

e) Successfully complete examination(s) if specified by the PWCB.

f) Upon reinstatement, pay the pro-rated dues for the current fiscal year.

5.0 Storage of Files

5.1 The Registrar shall maintain for fifteen years the complete digital file of a member that has been suspended, cancelled, resigned or deceased.

6.0 Confidentiality, Freedom of Information and Protection of Privacy

6.1.1 Applications are treated as confidential. Access to information is privileged to ASTTBC Registration Staff, the Board and designated File Reviewers, or others authorized by the Registrar. In exceptional circumstances the file may be disclosed, on a confidential basis, to external audit teams.

6.1.2 ASTTBC Council authorizes the release of files for review by the applicant during working hours. If the Registrar has cause to refuse, the matter shall be referred to Council.

6.1.2 An applicant, or registrant, may apply to the Registrar for an appointment to review their file (excluding references).
Appendices
Appendix 1: Registered Public Works Technician (RPWT) Occupational Competencies

All RPWT applicants are required to achieve the majority of indicators for each of the competencies described in 1.0, 2.0, 3.0 and 4.0. In addition, a minimum of one optional competency selected from 5.0, 6.0, 7.0, 8.0 or 9.0 is required for RPWT certification.

<table>
<thead>
<tr>
<th>No.</th>
<th>Competencies</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| 1.0 | Assess safety risks and maintain safe work places and practices. | 1. Identify the agencies and authorities overseeing safe work practices in British Columbia.  
2. Describe and recognize safety risks associated with confined space, fall hazards, pressurized or combustible fuels, chemicals and other materials.  
3. Maintain personal and public safety while working with and around heavy equipment including excavators, cranes, crushers, trucks and tractors.  
4. Explain the importance of safe excavation practices as per part 20 of Occupational Health and Safety (OHS) Act including underground utility damage prevention and excavation stability risks.  
5. Describe personal and public safety risks and safe practices related to work around electricity supply systems, electrical equipment installation, maintenance and operation.  
6. Implement safe hoisting and lifting practices as described in Part 15 of OHS.  
7. Promote public safety regarding hazardous work sites and environments requiring mitigation of risks due to excessive noise, dust, traffic, falling into excavations of risk of falling objects. |
| 2.0 | Select and safely use equipment appropriate for various jobs. | 1. Describe the appropriate type and size of equipment used when excavating or compacting.  
2. Specify the most appropriate hand tools required for various tasks and working conditions.  
3. Identify, inspect, maintain and safely use electric, pneumatic, hydraulic and gasoline-powered portable tools.  
4. Specify the appropriate size and type of auxiliary equipment such as generator sets, lighting towers, pumps, compressors, excavators and conveyors.  
5. Secure, transport, set-up and commission auxiliary equipment. |
| 3.0 | Apply skills generic to all RPWT competencies. | 1. Maintain a professional work ethic.  
2. Apply effective interpersonal skills in the workplace context.  
3. Apply effective communication skills.  
4. Describe public works operations, organizational structure and to functions.  
5. Apply technical math to solve problems involving measurement, volumes, areas, weight, conversion of units, slope, angles and arcs.  
6. Create and interpret drawings, sketches and maps including site plans, sections, contours, profiles, elevations and detail and associated nomenclature.  
7. Use basic surveying techniques and instruments to establish grades, layouts and relationship to plans.  
8. Describe the key characteristics and uses of common construction materials including aggregates, geotextiles, asphalt, concrete, wood, metal and plastics. |
| 4.0 | Describe and apply environmental best practices. | 1. Demonstrate awareness of environmental regulations and their application under federal, provincial and local agencies such as the Ministry of Environment, Department of Fisheries and Oceans and Ministry of Health.  
2. Describe ways to mitigate environmental risks related to fish and wildlife including riparian area protection, concepts of fish biology and the effects of silt and pollution on birds, fish and wildlife.  
3. Describe and apply erosion prevention measures when doing earthworks.  
4. Describe and apply practices that will reduce environmental damage from spills, chemical contamination and disposal of hazardous materials.  
5. Describe risks and safe methods for controlling invasive and noxious plant species.  
6. Describe and protect archeological sites, heritage buildings and sites including First Nations cultural, historical sites and values such as culturally modified trees, human remains and middens.  
7. Describe best practices in collecting and disposing of solid waste using approved reduced waste methods. |
| 5.0 | Describe fundamental principles and criteria for constructing and maintaining roads, sidewalks and signage for vehicle and pedestrian traffic. | 1. Describe basic design principles and construction methods for: stairs, ramps, sidewalks, curbs, gutters, roadways, bridges, culverts, street lights, signals, signage and road markings.  
2. Describe the materials and techniques used for road surface treatments and for the placement and compaction of subgrade materials for various site and soil conditions.  
3. Describe techniques used for road surface repairs and maintenance including repair of concrete.  
4. Identify and correct conditions requiring new signage design, placement, installation, repair or maintenance.  
5. Perform earthworks processes including layout, excavating, backfilling and compacting to specifications. |
| 6.0 | Describe fundamental principles and methods of constructing, maintaining and repairing water supply systems. | 1. Identify water supply components and construction techniques for pressurized piping systems  
2. Explain the principles of potable water wells and pumps including routine adjustments, repair and water quality monitoring.  
3. Describe routine maintenance, troubleshooting and emergency repair procedures for pumping systems.  
4. Demonstrate awareness of Drinking Water Quality regulations and guidelines and their application under federal, provincial, and local agencies.  
5. Describe water treatment parameters, drinking water standards and methods of maintaining common treatment technologies.  
6. Perform pressure testing, flushing and disinfection.  
7. Describe fundamentals of hydraulics including flow volume, cross connection detection, backflow prevention, pressure, head and water hammer.  
8. Monitor, adjust, trouble shoot and repair valves, hydrants, meters, force mains and service connections. |
### 7.0 Interpret essential regulations as they apply to the design construction, maintenance and repair of waste water systems.

1. Check the condition and repair sewer system components including: manholes, pump stations (lift stations), catch basins, inlet and outfall structures, discharge to surface bodies, settling ponds, and underground infiltration systems.
2. Describe Sewerage System Regulation requirements for onsite wastewater systems.
3. Maintain, troubleshoot and repair wastewater pumping systems.
5. Describe purposes, procedures, materials and equipment to perform flushing, jetting, vacuuming, camera inspections, dye and smoke testing.

### 8.0 Conduct preventative basic maintenance and routine repairs on residential and commercial buildings.

1. Describe essential features of the BC Building Code applicable to the construction of: foundations, framing, flooring, roofing, plumbing, electrical, heating and ventilation systems, vapor barrier and insulation.
2. Demonstrate fundamental carpentry and construction processes when assisting in the installation of doors, windows, cabinets, stairs, ramps and handrails.
3. Describe the essential features and components of potable water supply and wastewater drainage systems.
4. Identify various types of roofing materials suitable for flat and sloping roof styles and components such as vents, flashing and gutters.
5. Select and apply paint and other materials used to protect and beautify residential, commercial and heritage buildings.
6. Recognize unsafe conditions and recommend appropriate process and qualified people to remediate conditions of mold, asbestos, insect, animal and pest infestation.

### 9.0 Monitor, maintain and repair parks and playground areas, structures and equipment.

1. Describe due diligence and safety issues related to inspection of parks and playground equipment.
2. Describe the importance of structural integrity of structures and playground equipment accessible to the public.
3. Conduct routine ocular inspections to identify when maintenance and repair is needed.
4. Report conditions in parks and playgrounds that may cause risks to public safety.
5. Outline regulatory requirements for various recreational facilities.
6. Inspect, repair and maintain sports fields of various surface materials and requirements specific to the intended sport.
7. Repair and maintain trails and natural areas to ensure sustainability and public safety.
8. Repair and maintain irrigation systems and equipment including flood control plans.
9. Select, plant and maintain shrubs, annuals, perennials, trees, grass and turf.
10. Identify strategies for controlling damage to flora due to pests, pest infestation, wildlife or climate extremes.
Appendix 2: Certified Public Works Inspector (CPWI) Occupational Competencies

A numerical taxonomy is listed in the right hand columns, ranking the required competency from level 1 (simple recall of facts) to 6 (complex judgments). The ranking is intended to provide guidance for assessment of competencies, and is based on the following outline:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Knowledge</td>
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<tr>
<td>2.</td>
<td>Comprehension</td>
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<tr>
<td>3.</td>
<td>Application</td>
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<tr>
<td>4.</td>
<td>Analysis</td>
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<tr>
<td>5.</td>
<td>Synthesis</td>
</tr>
<tr>
<td>6.</td>
<td>Evaluation</td>
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</tbody>
</table>

1. Knowledge: The recognition and recall of factual information providing the foundation of thought processes.
2. Comprehension: Interpreting or understanding the meaning or use of factual information.
3. Application: Selecting relevant information to be applied when completing a duty or task.
4. Analysis: Analytical ability to interpret and apply information when considering a duty or tasks.
5. Synthesis: Combining or consolidating multiple sources of information to form a new opinion, action or result.
6. Evaluation: Making judgments to determine if an object or an action conforms to specifications or to acceptable performance standards.

1 Taxonomy of Educational Objectives: The Classification of Educational Goals (Bloom et al 1956)

<table>
<thead>
<tr>
<th>No.</th>
<th>Competency</th>
<th>Indicators</th>
<th>Level</th>
</tr>
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<tbody>
<tr>
<td>1.0</td>
<td>Apply fundamental occupational skills</td>
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</tbody>
</table>
2. Apply general principles of professionalism, diligence.  
3. Advocate professionalism, best practices, promote regulatory compliance | 6     |
| 1.  | Formulate effective communications             | 1. Present verbal and written communications with English literacy suited for a Canadian technical workplace.  
2. Apply techniques for active listening, conflict resolution, and negotiations.  
3. Employ verbal communication skills suited to liaison and coordination with others incidental to the work.  
4. Industry specific, technical communication skills:  
5. Interpret specifications, standards, test reports.  
6. Use verbal and written skills to convey technical conclusions and expectations; to recommend acceptance or rejection of materials or workmanship. | 4     |
| 1.  | Apply math and science concepts                | 1. Apply basic math concepts including decimal and percentage expressions, fractions and the order of arithmetic operations.  
2. Apply metric and imperial systems of measurement to convert from one system to the other, interpret specifications expressed in either system of measurement.  
3. Use scale systems to interpret drawings and create simple scale sketches. | 2     |
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<th>No.</th>
<th>Competency</th>
<th>Indicators</th>
<th>Level</th>
</tr>
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<tbody>
<tr>
<td>4.</td>
<td>Use expressions of slope such as percentage (rise/run) and ratios to measure and describe site topography and to specify constructed features such as grade of piping, roadways, and sidewalks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Calculate volumes for earthworks, size of tanks, transportation of materials and costing.</td>
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</tbody>
</table>
| 1.4 | Evaluate measurements | 1. Record accurate measurements in the field to support drawings and reports.  
2. Use basic survey instruments to identify horizontal and vertical alignments using measuring tapes, eye levels, basic dumpy level or rotary laser.  
3. Use simple differential levelling techniques to determine elevations and to confirm elevations of constructed features using eye level, rotary laser or similar instruments. | 4 5 6 |
| 1.5 | Evaluate engineering drawings | 1. Interpret technical plans, showing sections, elevation, profile views, detail and assembly views.  
2. Create sketches by hand to show field installations, observations.  
3. Employ common terminology, abbreviations and symbols used for civil engineering drawings and building plans. | 4 5 6 |
| 1.6 | Assess civil infrastructure, utilities | 1. Differentiate the purposes, typical configurations, materials used and the corresponding systems of classification and specifications for utilities such as water, sewer, gas, electricity and telephone.  
2. Differentiate the purposes, classifications/specs and key properties of common aggregates for earthworks.  
3. Differentiate the common types, constituents, properties and applications for asphalt and concrete  
4. Identify the construction methods for public works infrastructure. | 4 5 6 |
| 1.7 | Evaluate standards and specifications | 1. Evaluate applicable standards and specifications including: Master Municipal Construction Documents (MMCD) and municipal engineering standards.  
2. Assess public works construction standards and best practices for utilities installation, road construction, concrete and asphalt lay down, and restorations. | 4 5 6 |
| 1.8 | Distinguish utility marking conventions | 1. American Public Works Association (APWA) uniform color code for marking utility locations (as used by BCOneCall).  
2. Marking methods including paint, flags, stakes, chalk, offsets. | 2 2 2 |
| 1.9 | Apply basic computer skills | 1. Internet searches and e-mail applications.  
2. Basic word processing and spreadsheets.  
3. Basic digital file management. | 3 3 3 |
| 2.0 | Work Safely |                                                                                                                                           |       |
| 2.1 | Apply applicable OH&S regulations | 1. Part 4 General Conditions.  
2. Part 8 Personal Protective Clothing and Equipment.  
3. Part 9 Confined Spaces.  
4. Part 18 Traffic Control.  
5. Part 19 Electrical Safety. | 3 3 3 |
<table>
<thead>
<tr>
<th>No.</th>
<th>Competency</th>
<th>Indicators</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>PWI-1</td>
</tr>
<tr>
<td>6</td>
<td>Part 20 Construction, Excavation and Demolition.</td>
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</tr>
<tr>
<td>2.2</td>
<td>Evaluate safe work practices</td>
<td>1. Evaluate hazards to the personal safety of the Inspector and apply safe practices to mitigate hazards such as excavation stability, crushing and impact hazards, working around mobile equipment, confined space, electrical hazards and fall protection. 2. Advocate and exemplify safety behaviour.</td>
<td>4</td>
</tr>
<tr>
<td>3.0</td>
<td>Perform inspections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Evaluate background information</td>
<td>1. Review permits, plans, specifications. 2. Access historic inspection reports, test results, etc.</td>
<td>4</td>
</tr>
<tr>
<td>3.2</td>
<td>Develop a work plan</td>
<td>1. Establish required scope of inspection work, deliverables, client needs. 2. Determine schedule, confirm access and other coordination with contractor, project management, and others incidental to the work.</td>
<td>2</td>
</tr>
<tr>
<td>3.3</td>
<td>Conclude (perform) field assessments</td>
<td>1. Prepare field notes as per 4.1. 2. Conduct visual assessments of components, systems, procedures. 3. Determine quantifiable measurements, confirm specified alignments. 4. Perform sampling as required for quality control.</td>
<td>4</td>
</tr>
<tr>
<td>3.4</td>
<td>Evaluate findings</td>
<td>1. Compare as constructed features to drawings, specifications and standards. 2. Assess sampling/testing results if applicable. 3. Recommend acceptance or rejection of materials or workmanship.</td>
<td>4</td>
</tr>
<tr>
<td>4.0</td>
<td>Create documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Develop field notes and sketches</td>
<td>1. Include date, time, location, weather, and persons in attendance. 2. Create legible and accurate notes and sketches. 3. Ensure sufficient clarity to allow another competent person to understand. 4. Include adequate detail to support drawings and written report. 5. Include adequate detail to support recommendations and conclusions. 6. Optional: prepare a photographic record to record key findings and support conclusions.</td>
<td>3</td>
</tr>
<tr>
<td>4.2</td>
<td>Create records, reports</td>
<td>1. Prepare formal inspections and progress reports that include dates, time, identity of inspector and others, the methodology, scope, limitations of the inspection a conclusion and recommendations. 2. Create as constructed (as built) plans that include adequate representations, dimensioning and labelling as per industry standards and practice. 3. Maintain effective filing systems for records and reports.</td>
<td>3</td>
</tr>
</tbody>
</table>