



## Materials Testing and Inspection Requirements for Public Improvements

It is the intent of these requirements to set forth the duties and responsibilities and qualifications of the Permittee, Materials Testing and Inspection Consultant (Consultant), Design Engineer, Contractor, and County Engineer involved in the inspection and materials testing during the construction of public improvements for which a permit is required. Public improvements are those that are or may become dedicated, owned, or maintained by Washoe County.

Construction for which a permit is required shall be subject to inspection by the County Engineer concurrent with the Consultant. In addition, Consultant shall be retained by the Permittee to provide inspection and testing services during construction of the permitted work for public improvements in accordance with Washoe County Development Code (Development Code), the provisions of the Standard Specifications for Public Works Construction (SSPWC) adopted by Washoe County, in effect at that time, and Washoe County Standard Details.

### Duties and Responsibilities

#### 1. Permittee

- 1.1. The Permittee shall be responsible to ensure the work is performed in accordance with the approved plans and specifications, provisions of the Development Code, and SSPWC. The Permittee shall engage the Consultant to provide materials testing and inspections on a timely basis. The Permittee shall act as a coordinator between the Consultant, the Contractor, and the County Engineer.
- 1.2. In the event of changed conditions, the Permittee shall be responsible for informing the County Engineer in writing of such change and shall provide revised plans for approval.
- 1.3. If the Permittee wants to change Consultant during construction, Permittee shall notify the County Engineer of the proposed change. The work shall be stopped until the proposed replacement has been approved by the County Engineer and the replacement has agreed in writing to accept responsibility within the area of technical competence for approval upon completion of the work. The County Engineer shall not unreasonably withhold or delay its approval of Permittee's proposed replacement Consultant.
- 1.4. The Permittee shall attend a preconstruction conference scheduled by the County Engineer before starting work.

#### 2. Consultant

- 2.1. The Consultant shall have sufficient personnel with the necessary education, training, technical knowledge, certifications, and experience for Consultant's assigned duties.
- 2.2. The Consultant shall be licensed in the State of Nevada as a Professional Civil or Geological Engineer with experience in the inspection and testing of aggregate, soil, concrete, and asphalt. The Consultant shall be responsible for the daily activities of the field personnel and the work needed to satisfy the project materials testing and inspection requirements.



- 2.3. Field Personnel shall have the necessary certifications, including a valid American Concrete Institute (ACI) Field Testing Technician – Grade 1 Certification, sufficient education, and experience to assure understanding of the materials testing and inspection principles to properly perform their assigned duties. Field Personnel shall be familiar with the SSPWC, Washoe County Provisions and Standard Details, the project plans and specifications, the project soils report, and all applicable testing procedures for aggregates, soils, concrete, and asphalt.
- 2.4. If applicable, special inspection services will require a Special Inspector, certified by the International Code Council (ICC), for the special inspections required by the project 1704 Special Inspection Agreement. These special inspections include, but are not limited to: Reinforced Concrete, Structural Masonry, Pre-stressed Concrete, Structural Steel and Bolting, Structural Welding, and Fireproofing. Retaining or landscape walls may require additional special inspection by qualified field personnel, as deemed necessary by the Grading Permit or Building Permit requirements.
- 2.5. The Consultant's materials testing laboratory shall be responsible for laboratory testing of aggregate, soil, concrete, and asphalt and shall have suitable test equipment and laboratory facilities for storing, preparing, and testing samples. The laboratory shall have a current AASHTO Accreditation Program (AAP) using laboratory assessment and proficiency sample services provided by the AMRL and the CCRL for associated testing per the project requirements.
- 2.6. The services and tests performed by the Consultant shall be documented by a retrievable report that accurately, clearly, objectively, and unambiguously presents measurements, observations, examinations, and test results in accordance with the reporting requirements of the inspection or test method noted in the SSPWC. Daily field reports shall be submitted weekly, via email, to the County Engineer for review. Laboratory test results shall be submitted per the time allotted by the SSPWC for review and approval by the County Engineer.
- 2.7. The Consultant shall be responsible for materials testing and inspection and shall ensure compliance with the requirements and testing frequencies noted in the SSPWC, project plans, specifications, and soils report with respect to the following items:
  - 2.7.1. Inspection, including full-time inspection during placement of materials classified as rock fill under the SSPWC; compaction testing; sampling of materials during mass grading and earthwork construction; and providing soils laboratory test reports for material verification;
  - 2.7.2. Inspection and testing of the subgrade surface; verification that subgrade materials meet the project specifications; compaction testing of the subgrade; and verification that the finished surface is firm and unyielding and, if not, verification that any unstable areas are appropriately stabilized and non-yielding;
  - 2.7.3. Inspection and testing during the placement of underground utilities bedding and backfill; compaction testing of the bedding and backfill, including full-time observation during placement of backfill material that the SSPWC classifies as rock fill for verification of compliance with the project compaction requirements; and verification that these materials meet the approved submittals and soils report;



- 2.7.4. Inspection and testing of aggregate base courses to verify conformance with the approved material submittals; compaction testing of the finished aggregate base course; and verification that the finished surface is firm and unyielding and, if not, verification that any unstable areas are appropriately stabilized and non-yielding;
- 2.7.5. Full-time inspection, sampling and testing during placement of Portland Cement Concrete (PCC) for curb, gutter, sidewalk, driveway aprons, pedestrian ramps, alleys, valley gutters, structures, headwalls, slope paving, roadway pavement, manholes, valve and monument collars; verification of the approved mix design; sampling of PCC; and providing laboratory test reports of the PCC samples; and
- 2.7.6. Full-time inspection, sampling and testing during paving of asphalt; verification of the approved mix design; informational compaction testing; determination of rolling patterns; compliance with weather and temperature requirements; sampling of asphalt during paving; coring; and providing laboratory test results of the asphalt samples and cut samples.
- 2.8. Additional inspection and testing may be requested by the County Engineer to verify compliance with the project specifications, the cost which shall be the responsibility of the Permittee.
- 2.9. The Consultant shall bring nonconforming items to the immediate attention of the Contractor and the County Engineer. Such items shall be documented and be resolved in a timely manner.
- 2.10. Upon completion of construction of the public improvements, Consultant shall submit a stamped final project summary letter to the County Engineer stating that all items requiring inspection and materials testing within the scope of their work were fulfilled and reported and, to the best of their knowledge, are in conformance with the approved project plans and specifications.
- 2.11. The Consultant shall attend a preconstruction conference scheduled by the County Engineer before starting work.

### **3. Design Engineer or Architect**

- 3.1. The Design Engineer or Architect shall include inspection and materials testing requirements on the plans and specifications.
- 3.2. The Design Engineer or Architect shall provide review and approval of project submittals and Requests for Information (RFI) pertaining to the project. The Design Engineer or Architect shall provide copies of project submittals and RFIs to the County Engineer for review and acceptance.
- 3.3. The Design Engineer or Architect shall attend a preconstruction conference scheduled by the County Engineer before starting work.



## 4. Contractor

- 4.1. The Contractor shall be responsible for executing the work in accordance with the approved plans and specifications, the provisions of the Development Code, and SSPWC.
- 4.2. The Contractor shall be responsible for providing access to all construction work subject to inspection and materials testing. The approved plans and specifications shall remain on the project site for reference and review during construction.
- 4.3. The Contractor shall be responsible for notifying the Consultant and County Engineer for inspection and materials testing required by the approved plans and specifications. At least 48 hours advance notification is required for scheduling of inspection and materials testing.
- 4.4. Permittee's, Consultant's, or the County Engineer's failure to reject unacceptable materials or nonconforming work does not and will not be construed to imply acceptance of the material or work. The failure to reject any defective or nonconforming work or materials will not in any way prevent later rejection when such defect is discovered, and such failure shall not obligate the Permittee, Consultant, or Washoe County to make final acceptance per Washoe County Standards.
- 4.5. The Contractor shall attend a preconstruction conference scheduled by the County Engineer before starting the work.

## 5. County Engineer

- 5.1. The County Engineer or his designated representative shall monitor the work requiring inspection and materials testing performed by the Consultant to determine that adequate quality control is being provided.
- 5.2. The County Engineer or his designated representative shall provide inspection during construction of the dedicated public improvements.
- 5.3. The County Engineer shall review all inspection and materials testing reports provided by the Consultant.
- 5.4. The County Engineer shall conduct a preconstruction conference with the parties involved with the construction of the project prior to the start of work.
- 5.5. All infrastructure designed, inspected and constructed that is anticipated to be dedicated to Washoe County must follow all Development Code and Washoe County policy process before possible acceptance.
- 5.6. The County Engineer may reject work or materials that do not meet the project standards based on design, construction, or testing.