PART 1 - GENERAL

1.01 GENERAL:

The contract drawings provide baseline and benchmark references; the Contractor will be responsible for the layout of individual items of the Work. The responsibilities are as noted in 1.02, A and B of this specification section.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. Section 01 11 00 - Summary of Work

B. Section 01 78 39 - Record Documents

1.03 SURVEYING:

A. The Contractor shall provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:

1. Establishing and maintaining lines and levels from control points and baselines provided by the contract drawings.
2. Construction staking for all construction activities such as location of features, gridlines, structures including elevations of inverts, pipe slopes and rim elevations.
3. Recording of as-built information.

B. Survey base data:

1. The site plan for the construction project area was compiled by the designer of record.
2. The Engineer makes no representation that the survey information is complete or that it addresses every site condition which may be significant to the Work.
3. The provision of the survey information by the contract documents does not relieve the Contractor of the responsibility to carefully examine the site and to take into account any conditions or variance with or in addition to the conditions shown on the survey.
4. The existence and location of underground and other utilities and facilities indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction; refer to Section 01 76 00 - Protection of Existing Facilities.

1.04 QUALITY ASSURANCE:

A. The Contractor’s surveyor shall be a licensed surveyor in the State of Washington. The Contractor shall keep updated survey field notes in a standard field book and in a format set by the Engineer. These field notes shall include all survey work

performed by the Contractor's surveyor in establishing line, grade and slopes for the construction work. Copies of these field notes shall be provided the Engineer upon request and, upon physical completion of the Contract Work, the field books shall be submitted to the Engineer and become the property of the Engineer.

B. If the survey work provided by the Contractor does not meet the standards of the Engineer, the Contractor shall, upon the Engineer's Written Notice, remove the individual or individuals doing the survey work and retain a suitable replacement surveyor. If this fails, the Engineer, at the Contractor's expense, may complete the survey work required and deduct the cost from the contract amount.

C. The Engineer reserves the right to check all work laid out by the Contractor during the progress of the work, as deemed necessary to verify conformance with the plans and specifications. The Contractor shall allow a reasonable time to permit such checks before completing the work. These checks will be made during the regular working hours.

D. If existing reference and control points are damaged, moved, altered, or destroyed by the Contractor, the Park Surveyor's cost of re-establishing such points shall be borne by the Contractor at the crew rate of $240 per hour.

E. All costs for survey work required to be performed by the Contractor shall be included in the bid.

1.05 SUBMITTALS:

A. Comply with pertinent provisions of Section 01 33 10 - Submittals.

B. Upon request of the Engineer or the Consultant, the Contractor shall submit:

1. Data demonstrating qualifications of persons proposed to perform field engineering services.
2. Documentation verifying accuracy of field engineering work.
3. Certification, signed by the Contractor's surveyor, that elevations and locations of improvements are in conformance or non-conformance with requirements of the contract documents.

1.06 PROCEDURES:

A. In addition to procedures directed by the Engineer or the Consultant for proper performance of the Contractor's responsibilities, the Contractor shall:

1. Protect construction control points, including grade control.
2. Preserve permanent reference points during progress of the work as shown on the contract drawings or staked in field.
3. Preserve grade control stakes.
4. Not relocate existing reference and control points without approval of the Engineer and Parks Surveyor.
5. Report damaged or destroyed reference or control points to the Parks Surveyor.

6. Be responsible for any increased costs or delays to the Contract relating to reference and/or control points which are damaged, moved, altered or destroyed by the Contractor or its subcontractors, suppliers, agents or employees.
7. Discontinue use of reference points alleged to be in error until accuracy of the points can be verified.

PART 2 - PRODUCTS: *Not Used*

PART 3 - EXECUTION

3.01 CONSTRUCTION LAYOUT:

A. The Contractor shall:

1. Employ a surveyor licensed by the State of Washington to lay out the Work of this Contract.
2. Establish working lines for each structure and at reasonable intervals across the site lay out the work described by the contract documents using recognized surveying methods and keeping an accurate field book of work completed.
3. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale drawings to determine dimensions. Advise the entities engaged in construction activities of marked lines and levels provided for their use. As construction proceeds, check every major element for line, level and plumb.
4. Provide stakes as required by various sections of these specifications and as required for accurate construction, and make staking information available to the Consultant for review prior to executing construction based on staking.
5. Record deviations from required lines and levels and advise the Engineer when deviations that exceed indicated or recognized tolerances are detected. On project record drawings record deviations that are accepted and not corrected.

3.02 AS-BUILT INFORMATION:

A. Contractor shall locate and establish grade of completed construction for use in preparing as-built documents of the project. Do not cover work until survey has been completed. As-built information is necessary for, but not limited to, the following:

1. Locations of utility structures, fittings and changes of direction of underground utilities.
2. Locations of shutoffs, valves and clean-outs for underground utilities, including locations of solenoid valves for irrigation systems.

3. Corners and/or center lines, and benchmark elevations of bridges, buildings, and other major structures.
4. Center lines and grades of roads, paths, vehicle gates.
5. Points at which new utility lines intersect existing.

END OF SECTION